



DECEMBER 1, 2020

Johnson County Natural Resource Management Plan



Natural Resource Management Plan
Y2 Consultants, LLC & Falen Law Offices

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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

ARMPA – Approve Resource Management Plan Amendment

ARPA – Archeological Resources Protection Act

AUM- Animal Unit Month

BGEPA – Bald and Golden Eagle Protection Act

BHMC – Bighorn Mountain Coalition

BLM- Bureau of Land Management

BMP-Best Management Practice

BOCC-Board of County Commissioners

BW-HMA – Buffalo Municipal Watershed Wildfire Hazard Mitigation Assessment

CAA- 1970 Clean Air Act

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

CCA – Candidate Conservation Agreements

CCAA – Candidate Conservation Agreements with Assurances

CCCD-Clear Creek Conservation District

CDC – Center for Disease Control

CEQ- Council on Environmental Quality

CLG – Certified Local Government

CRP – Conservation Reserve Program

CWA – Clean Water Act



CWD – Chronic Wasting Disease

DEQ- Department of Environmental Quality

DOD- Department of Defense

EA- Environmental Assessment

ECOS – Environmental Conservation Online System

EIS- Environmental Impact Statement

ENSO- El Niño-Southern Oscillation

EPA- Environmental Protection Agency

ERFO – Emergency Relief for Federally Owned Roads

ERMA-Extensive Recreation Management Area

ESA - Endangered Species Act 1973

FAR – Functioning-at-risk

FAST – Fixing America’s Surface Transportation Act

FDQA – Federal Data Quality Act

FEMA – Federal Emergency Management Act

FERC – Federal Energy Regulatory Commission

FHWA- Federal Highway Administration

FLAP – Federal Lands Access Program

FLH-Federal Lands Highway Division

FLMPA- Federal Land Management and Policy Act 1976

FLTP – Federal Lands Transportation Program

FSA – Farm Service Agency

GHG- Greenhouse Gas

GLO - General Lands Office



GPC—Groundwater Pollution Control

GPM – Gallons per Minute

HA – Herd Area

HMA – Herd Management Area

IMR – Intermountain Range

IRA – Inventoried Roadless Areas

IPCC- International Governmental Panel on Climate Change

ISR – In-situ Recovery

JCCLUP – Johnson County Comprehensive Land Use Plan

JCCWP - Johnson County Community Wildfire Protection Plan

JCSAR – Johnson County Search & Rescue

LNG – Liquefied Natural Gas

LUP- Land Use Plan

LUPAs – Land Use Plan Amendments

L RTPs-Long Range Transportation Plans

LWC – Lands with Wilderness Characteristics

LWCF- Land and Water Conservation Fund Act of 1964

MBTA – Migratory Bird Treaty Act

MOA - Memorandum of Agreement

MOU - Memorandum of Understanding

MUSY-Multiple Use Sustained Yield Act 1960

NAAQS – National Ambient Air Quality Standards

NAISMA - North American Invasive Species Management Association

NAO- North Atlantic Oscillation



NEPA- National Environmental Policy Act 1973

NF – Non-functioning

NFHL – National Flood Hazard Layer

NFIP – National Flood Insurance Program

NFMA- National Forest Management Act 1976

NFS – National Forest System

NGL – Natural Gas Liquid

NHPA – National Historic Preservation Act

NMFS – National Marine Fisheries Service

NNDSS - National Notifiable Diseases Surveillance System

NPS- National Park Service

NRCS – Natural Resource Conservation Service

NRHP – National Register of Historic Places

NRMP- Natural Resource Management Plan

NSFLTP – Nationally Significant Federal Lands and Tribal Projects Program

NSS – Native Species Status

NWR – National Wildlife Refuge

OAA-Organic Administration Act 1897

OHV – Off-Highway Vehicle

OMB - Office of Management and Budget

PDO -Pacific Decadal Oscillation

PFC—Proper Functioning Condition

PILT- Payments In Lieu of Taxes

PRPA – Paleontological Resource Preservation Act



RMP-Resource Management Plan
RNS-Research Natural Areas
R.S. 2477 – Revised Statute 2477
RTP – Recreational Trails Program
SHPO – State Historic Preservation Act
SIPs – State Implementation Plans
SMP – Special Management Program
SRMAs-Special Recreation Management Areas
SWAP – State Wildlife Action Plan
TCP – Traditional Cultural Properties
TGA - Taylor Grazing Act 1934
THPO – Tribal Historic Preservation Officer
USACE – United States Army Corps of Engineers
USFS- United States Forest Service
USFWS – United State Fish and Wildlife Service
USGS- United State 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 Ranging Horses and Burros Act
WGFD – Wyoming Game and Fish Department
WHMA – Wildlife Habitat Management Area
WIZ – Water Influence Zone



WOGCC – Wyoming Oil and Gas Conservation Commission

WPLI – Wyoming Public Lands Initiative

WQD—Wyoming Quality Division

WSA – Wilderness Study Area

WWDO – Wyoming Water Development Office

WYDOT- Wyoming Department of Transportation



INTRODUCTION

PURPOSE

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. A 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).

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, protection, and preservation of natural resources on the federal and public lands within its jurisdiction. The goal of a 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).

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 in the course of 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 tied 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. As a part of the scoping process, lead agencies must invite likely affected local agencies and governments to participate as a cooperating agency. 40 C.F.R. § 1501.9. An invitation during the scoping period is not required to participate as a cooperating agency and a local government can request to be a cooperating agency even after the scoping period. With respect to cooperating agencies, a lead agency must (1) request the participation of cooperating agencies at the earliest practicable time; (2) use the environmental analysis and proposals of cooperating agencies with jurisdiction to the maximum extent practicable; (3) meet a cooperating agency at the cooperating agency’s request; (4) determine the purpose and need, and alternatives in consultation with the cooperating agency. 40 C.F.R. § 1501.7(h). 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. A NRMP, while not required, can aide 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. See Section 2.5 for County authority under state law.

Cooperating agency status can be an expensive, time consuming, and cumbersome process and may be particularly challenging for communities with limited resources. A 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, 2012b). 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)).

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.

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 managed park land management. 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 of the nation’s parklands, this included parks previously held by the War Department, national monuments previously managed by the USFS, and 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 interest in land and other natural resources” (*Executive Order 13352*, 2017). NPS is also expected to accommodate local participation in Federal decision-making (*Executive Order 13352*, 2017).



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, though new data collection or research is not required. 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 interpret 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.

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 developed this plan in public meetings, allowing for participation and contribution from the public. A steering committee has guided development of the draft document, including objective and priority development.

The 2005 Johnson County Comprehensive Land Use Plan was referenced for the development of this plan. A steering committee of 12 people has guided development of the draft document, including objective and priority development. See [Appendix C](#) for a list of steering committee members.

The draft document was being released for public comment for 30 days beginning on August 17, 2020. Written comments received during the public comment period were incorporated into the final plan as appropriate. A public meeting in both Kaycee and Buffalo was held on September 1, 2020 in which the public had the opportunity to participate and contribute to the plan as well as ask questions regarding the plan. The final plan was presented to the Johnson County Board of County Commissioners for final adoption in December 2020.



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).

AMENDING THE NRMP

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 at least every five years.

COUNTY EXPECTATIONS FOR NATURAL RESOURCE MANAGEMENT PLAN

While the statutes and regulations outlined above spell out the legal requirements of the Federal agencies in their duties in working with local governments, the County recognizes that part of this land use planning process is to develop a solid working relationship with the Federal agencies doing business in Johnson County. The County also recognizes that “coordination,” “cooperating agency status” and “consistency review” are required actions on behalf of both the Federal agencies and the Local governments. To that end, the County commits to the following actions:

1. Within 30 days of the date of adoption of this plan, the County will inform Federal agencies of the date, time, and location of their regularly scheduled meetings with an open invitation that Federal agency personnel should attend such meetings if there are items to discuss. Meetings will be scheduled on a biannual basis.
2. Within 30 days of the date of adoption of this plan, the County will transmit a copy of this Natural Resource Management Plan to the state, regional, and local Federal agency offices doing business within Johnson County for their consideration as part of any consistency review that is required pursuant to federal statute.
3. Within 30 days of the adoption of this plan, the County will contact the BLM and USFS offices to determine a protocol for informal communication to ensure each is apprised of 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 County supports establishment of a multi-agency stakeholder group, hosted by the County Commissioners, to review and discuss ongoing actions and issues on federal lands and propose regular meetings on a schedule to be determined, but not less than quarterly.

Credible Data

To the greatest extent possible, data should drive all land use planning decisions. In this plan, “data” refers to information that meets, at a minimum, the Federal Data Quality Act (FDQA). The FDQA directs the Office of Management and Budget (OMB) to issue government-wide guidelines that “provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility and integrity of information (including statistical information) disseminated by Federal agencies” (Sec. 552(a) Pub. Law. 106-554; HR 5658; 114 Stat. 2763 (2000)).



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

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

- a) Quality,
- b) Utility (i.e., referring to the usefulness of the data for its intended purpose),
- c) Objectivity (i.e., the data must be accurate, reliable, and unbiased), and
- d) Integrity.

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.

Resource Management Objective:

- A. Credible data has a universal meaning for all Federal agencies in the County and is the basis for all agency decisions within the County.

Priorities:

1. Appropriate quantitative and qualitative data should be included in federal land use planning decisions that meets credible data criteria, even if the data were not produced by a Federal agency.
2. Support the use of credible scientific data.
3. All Federal agencies should only use data that meets the minimum criteria described in their respective handbooks and manuals, as updated:
 - a. BLM: BLM H-1283-1 Data Administration and Management (Public) (Bureau of Land Management, 2012a)
 - b. USFS: FS FSH 1909.12, Chapter 40, Land Management Planning Handbook – Key Processes Supporting Land Management Planning (US Forest Service, 2013)
 - c. NPS: NPS PM 07-03 *NPS Interim Guidance Document Governing Code of Conduct, Peer Review, and Information Quality Correction* (National Park Service 2008); unless other criteria are agreed upon between the County and agencies.



CHAPTER 1: CUSTOM AND CULTURE

1.1 COUNTY INTRODUCTION AND OVERVIEW

Johnson 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 the NEPA and federal land planning. Since the customs, culture, and history of Johnson County (“the County”) are inseparably tied to the use of and access to land and resources managed by Federal agencies, the Board of County Commissioners (BOCC) will use the policies set forth in this NRMP to represent the vital interests of the County in federal natural resource planning efforts.

The settlement of present-day Johnson County began in the 1870s, primarily by cattle ranchers. Johnson County was formally established in 1879 spanning the area that is now Johnson, Big Horn, Sheridan and Washakie counties. In 1887 and 1890 the County was reduced in size with the formation of Sheridan and Big Horn Counties. Prior to being named Johnson County, the county was labeled as Carbon County from 1872 to 1879 and then as Pease County until finally becoming Johnson County (Farquhar, 2014). Crops grown locally include alfalfa and grass hay, oats, feed barley, native grass, and sugar beets. Some irrigated areas are used for pasturing cattle, sheep, horses, and other livestock. Many ranches are operated primarily in support of livestock that graze at least partially on federal land leases. The livestock industry accounts for a large portion of Johnson County’s agricultural income and is the oldest continuing industry in the County. It was the livestock industry that originally brought settlement to Johnson County. Families established homesteads along rivers and began irrigating the surrounding land to increase production. Clear Creek was the earliest irrigation development in 1878. By the mid-1880s over 10,000 acres along Clear Creek were irrigated. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)



In 1892 large-operation cattle barons monopolized much of the range in Johnson County. In the years prior to 1892 tension grew between small homestead ranch operations and the cattle barons. Nate Champion was a homestead rancher on a fork of the Powder River that refused to back down to the cattle barons as conflicts arose. Following an altercation, Nate Champion identified one of the men that attacked him. During the investigation into who had hired the men, some of the cattle barons gathered a posse and killed Nate Champion. The event was later named the Johnson County War. While the barons involved were arrested, the Governor at the time did not allow access to them for questioning and Johnson County was charged with all expenses to hold the prisoners. Eventually the charges were dropped without a trial. The



resulting outrage among Johnson County residents initiated changes in the Wyoming Stock Growers Association and Wyoming elected officials. The events of the Johnson County War changed ranching across the region. (Davis, 2014)

In more recent times, many people from out-of-state come to Johnson County to experience the traditional western lifestyle, visiting dude ranches and museums, attending rodeos and the County fair, or simply observing the beauty of the Bighorn Mountains. Some of the recreation activities enjoyed within the County include off-road vehicle use, snowmobiling, hunting and fishing, rock climbing, rock-hunting, horseback riding, mountain biking, camping, hiking, outdoor photography, bird-watching, observing the many paleontological and geological features, and enjoying the abundant wildlife of the area. Family traditions of outings to camp, hunt, fish, ride horses, backpack, and generally enjoy the outdoors are central to the County's identity and way of life. To live here is to be connected to the land.

The greatest outside influence on the continuation of these central aspects of the custom and culture of the County has been, and will continue to be, the management actions and policy of State and Federal governments, whose jurisdiction over federal lands, its resources, and its water is fundamental to the County's economic structure and way of life. Future land management actions in Johnson County will protect the historical use, access to, and conservation of the land. Since the County's inception, public lands and Federal agencies have been important factors contributing to the development of the County's customs and culture. Federal land management agencies are an important asset to the County, providing 15% of the employment within Johnson County.

Coal, timber, natural gas, oil, bentonite, and uranium mining contribute extensively to the development and the current custom, culture, and economy of Johnson County (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005). The extraction and sale of these energy resources employs many residents and is a major contributor to the tax dollars that support County and municipal governments (Data USA, n.d.). The railroad was central to the early development of the County and was first used for the shipment of livestock, farm produce, and to transport passengers.

County Overview

Johnson County is located in north-central Wyoming, south of Sheridan County and east of Big Horn County (Figure 1). The County is located on the high plains' characteristic of eastern Wyoming, bordered by the Bighorn Mountains on the northwest. The Powder River flows from south to north through the eastern portion of the County. The highest elevation in the County is the Cloud Peak summit at 13,167 feet in the Bighorn Mountains.

As the tenth largest County in Wyoming, Johnson County spans over 2.5 million acres (4,175 square miles), making it larger than the states of Rhode Island and Delaware. Approximately 31% of the land in Johnson County is federally owned, with the largest portions being held by the BLM at 20% (504,390 ac) and the USFS at 11% (328,320 ac).



The total population in Johnson County is 8,569, according to 2010 U.S. Census data. The population is largely rural, with only about half the population living within the two incorporated towns (Buffalo and Kaycee). Unincorporated communities within the County include Hazelton, Linch, Saddlestring, and Sussex.



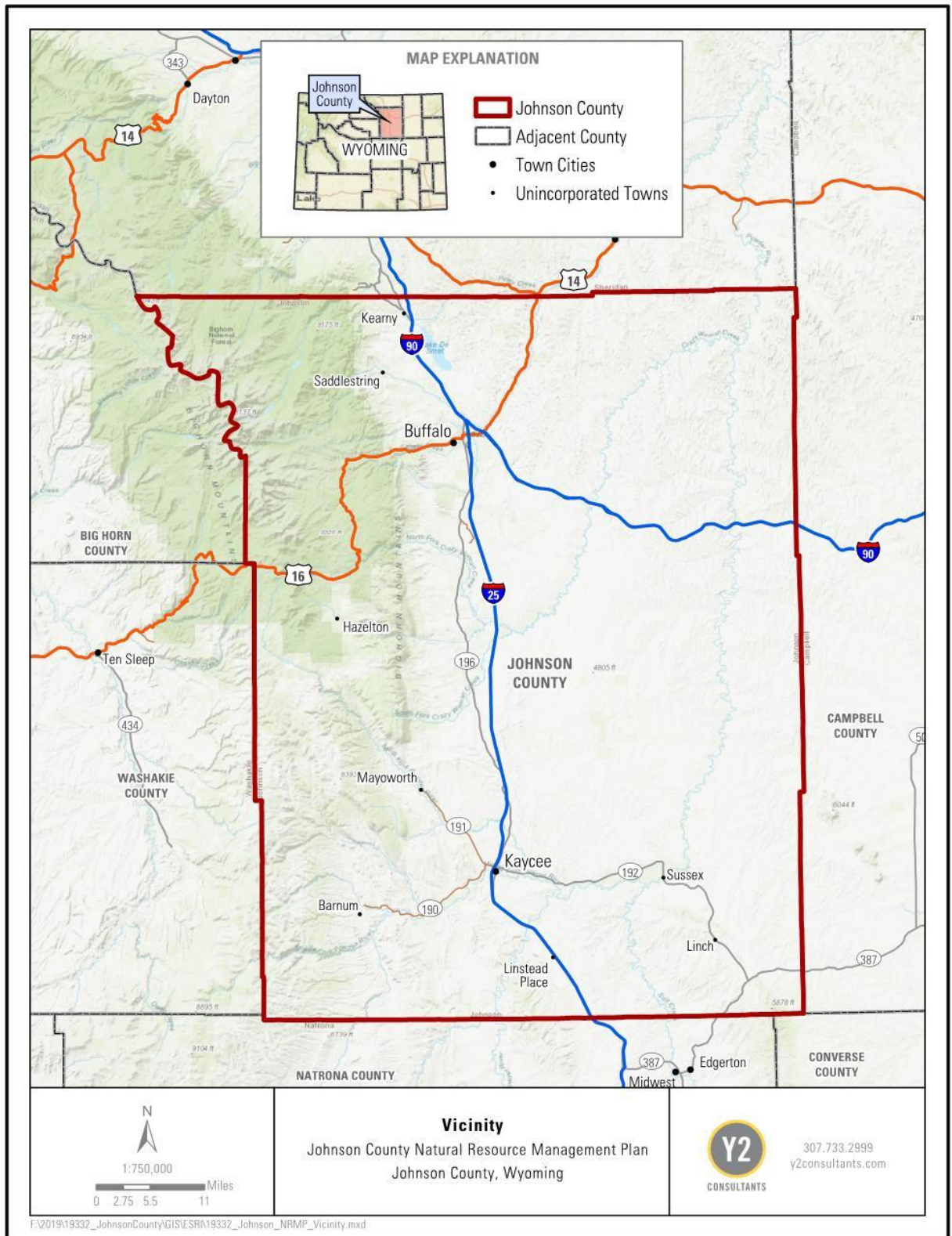


Figure 1. Johnson County Natural Resource Management Plan Area.



CHAPTER 2: LAND USE

2.1 LAND USE

Johnson County is the tenth largest County in Wyoming, spanning 4,175 square miles. Johnson County relies heavily on federally owned lands for tourism, recreation, mining, oil and gas, hunting, and grazing. Figure 2 shows the land ownership of Johnson County.

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 the Natural Resource Conservation Service (NRCS), to develop and implement soil erosion control programs (WACD, n.d.). In 1941, the Wyoming State Legislature passed an enabling act that established conservation districts in Wyoming. Conservation districts direct programs protecting local renewable natural resources. Wyoming now has 34 conservation districts in 23 counties (WACD, n.d.).

Two conservation districts exist in Johnson County: the Clear Creek Conservation District (CCCD) in the northern half of the County (Buffalo), and the Powder River Conservation District in the southern half (Kaycee)(Social Resources for Western Wyoming, n.d.).

Bureau of Land Management (BLM)

The BLM manages approximately 20% of the land in Johnson County. This includes most of the unincorporated County. Johnson County is included in the High Plains District and includes a field office in Buffalo. The Buffalo Field Office manages 780,291 acres, including much of Johnson, Campbell, and Sheridan Counties. The Buffalo Resource Management Plan (RMP) was approved in a record of decision signed September of 2015.

The BLM we know today was established in 1946 by combining the General Lands Office (GLO) and the U.S. Grazing Service. The GLO was created in 1812 and was responsible for all federal land sales, patents, and entries 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 U.S. 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 USC § 1732) (FLPMA, 1976). FLPMA requires the BLM to administer federal lands "on the basis of multiple use and sustained yield" of all resources (FLPMA, 1976).



United States Forest Service (USFS)

The USFS manages approximately 11% of the total land in Johnson County within the Bighorn National Forest. The Bighorn National Forest is headquartered in Sheridan. The Powder River Ranger District is located in Buffalo.

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 U.S. 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 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 Big Horn Forest Reserve was one of the original reserves in the OAA in 1897. The OAA declared that forest reserves would be created either to protect water resources for citizens 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 USFS. The Multiple-Use Sustained-Yield Act of 1960 (MUSY) requires that forests be managed for various multiple uses (MUSY of 1960, 1960). This idea was further codified in the National Forest Management Act (NFMA) (16 USC § 1601(d)).

The Bighorn National Forest, established in 1897, is located along the eastern border of Bighorn County and continues into Sheridan and Johnson counties (USFS, n.d.-e). The Bighorn National Forest is subdivided into three Ranger Districts: the Tongue River Ranger District based out of Sheridan, the Powder River Ranger District based out of Buffalo, and the Medicine Wheel Ranger District based out of Greybull, Wyoming. The Powder River Ranger District overlaps with Johnson County. The Forest boundary encompasses 1,115,161 acres of federally protected land, with 328,320 acres within Johnson County. The Bighorn National Forest provides recreation and scenic opportunities for the residents of Johnson County and neighboring counties.

NFMA requires that each national forest and grassland be governed by a management plan. The Bighorn National Forest Land and Resource Management Plan was revised in 2005 in accordance with federal statutes (USFS, n.d.-e). Two plans, the Northern Rockies Lynx Amendment (2007) and the Greater Sage-Grouse Record of Decision: Northwest Colorado, Wyoming (2015) modify specific activities in the 2005 Revised Land and Resource Management Plan. However, the BBNF does not contain Greater sage-grouse core areas and therefore is not impacted by the Greater Sage-Grouse Record of Decision. Johnson County participated as a cooperating agency during the Bighorn National Forest plan revision and continues to participate twice a year on a Steering Committee. The Steering Committee was recognized by the USFS Regional Forester in April 2019 for creating and maintaining resilient landscapes and as a model for effective collaboration. The USFS lands, as well as any forested lands managed by the BLM, within Johnson County shall be



managed and administered for multiple-use and sustained-yield in perpetuity so that future generations will have the opportunity to benefit from, use, and enjoy them as directed in NFMA.

Other Federal Agencies

At the time that this plan was adopted there were no other Federal agencies lands within Johnson County.



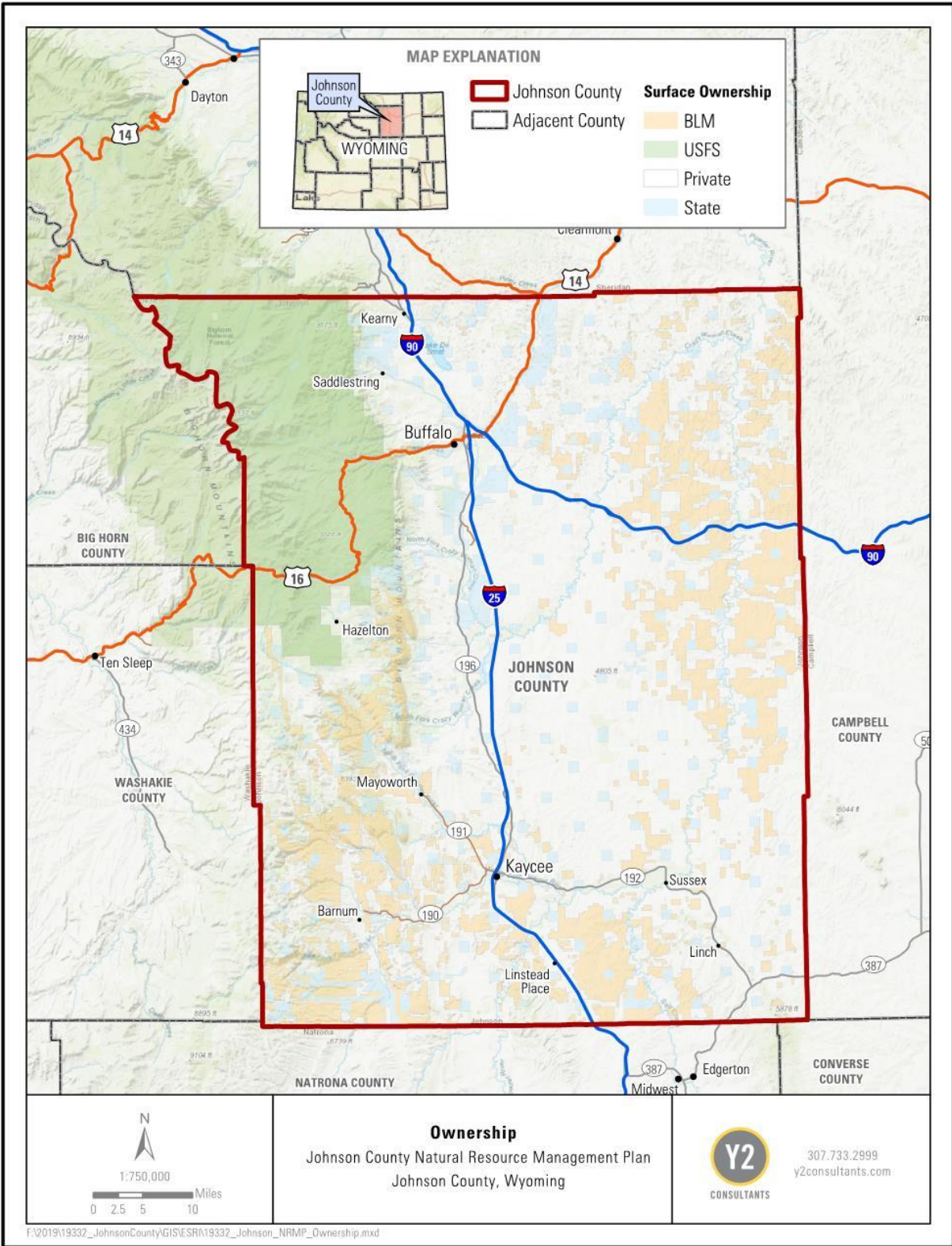


Figure 2. Johnson County Surface Ownership Map.



2.1 Land Use

2.2 TRANSPORTATION AND LAND ACCESS

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; including but not limited to fire protection, search and rescue, flood control, law enforcement, economic development, and the maintenance of County improvements.

It is vital to the sustainability of the livestock industry in Johnson County that grazing areas, and stock trails that connect them, be open and accessible. Livestock “trailed” from one grazing area to another must have access to 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.

Johnson County’s transportation corridors have long serviced diverse industries. Tourists constantly travel through the County to various destinations. There is also a significant amount of oil and gas traffic utilizing these corridors.

Resource Assessment and Legal Framework

Congress, as the constitutional manager of federal lands, has made it clear through natural resource statutes that the general public must have use of and access to the federal lands. It is vital to the County’s interests and performance of duties that full and complete access to 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. Road closures in Johnson County without prior coordination with the County could cause economic harm and impact citizen and visitor enjoyment of the County’s natural resources. Coordination on transportation and land access should continue and be enhanced wherever possible.

It is understood that the federal definition of “roadless” does not mean there are no roads present, but rather that the area is managed to prohibit the construction of new roads, or reconstruction of existing roads. Existing roads within roadless areas can continue to be maintained. Refer to the [2001 Roadless Rule](#)²⁵ for additional information.

The U.S. Department of Agriculture classifies roads within National Forests by five levels of maintenance: 1, 2, 3, 4, and 5. Level 1 roads refer to roads closed to motorized vehicles. Level 2 roads are maintained for high clearance vehicles, and Level 3-5 roads are maintained for standard passenger cars during the season of use. Refer to the Forest Service [Guidelines for Road Maintenance Levels](#)¹ for additional information.

The Taylor Grazing Act provides for the establishment, maintenance, and use of stock trails within established grazing districts (43 U.S.C. § 316). 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. (US Department of the Interior, 2015) Through the 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.

Federal Highway Administration (FHWA)

The Federal Highway Administration (FHWA) is an agency within the U.S. Department of Transportation 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 wholistic network. Directly, the FHWA provides grants to 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 (FLH) to specifically service certain groups and were reauthorized under the Fixing America’s Surface Transportation (FAST) Act. These programs are:

- Federal Lands Access Program (FLAP): “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 in 23 U.S.C. 203 to improve the transportation infrastructure owned and maintained by federal land management



agencies including USFWS, USFS, BLM, 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): “...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 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).

Wyoming Department of Transportation (WYDOT) works directly through the above programs to help secure funding and has annually. Through the FLAP program alone, Wyoming has secured \$73.3 million spread across 16 projects from 2013 to 2022.

United States Fish and Wildlife Service (USFWS)

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

United States Forest Service (USFS)

The federal lands managed by the USFS in the County are to be managed for multiple-use and sustained-yield uses (16 USC 1601(d)) (Multiple-Use Sustained-Yield Act of 1960, 1960) including, but not limited to agriculture (farming, irrigation, livestock grazing); recreation (motorized and non-motorized transport and activities, such as hunting, fishing, water and land sports, hiking, etc.); industry (mining, power production, oil and gas production/exploration, and timbering); intangible values (historical and cultural sites, access to open space, aesthetic values, conservation); and weed, pest, and predator control.

The USFS is directed to coordinate the preparation of Travel Management Plans with the County (36 CFR 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 CFR 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 CFR 212.54)



Bureau of Land Management (BLM)

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 federal lands. 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 (FLPMA, 1976). Due to the importance of transportation when balancing preservation with multiple use management, the BLM must now incorporate travel and transportation management decisions into all new and revised RMPs to address needs with regard to resource management and resource use goals and objectives. See the BLM's [Travel and Transportation Management Manual](#)²⁶ for more information. Travel Management Plans (TMPs) are the primary implementation-level decision documents laying out the management of BLM's travel network and transportation systems. Decisions made in TMPs are implementation-level decisions and should be tied to the goals, objectives, and management actions contained within the RMP. *Id.* at 4-1. The BLM is required to coordinate "inventory" with the County (43 USC § 1712) (FLPMA, 1976).

The upper Beartrap Creek drainage is a historic stock driveway that is still used today. The Buffalo BLM manages several stock trails in Johnson County that are essential to livestock movement to different grazing areas throughout the year. The Buffalo RMP specifically states that an objective of land resources is to continue the existence and use of stock trails. (BLM, 2015)

Revised Statute 2477 (R.S. 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).

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).

Resource Management Objective:

- A. There is full and open access to and through Johnson County federal lands for local purposes such as safety, health, and recreation use is maintained and expanded where possible.

Priorities:

1. Support designation of all currently open motorized and nonmotorized trails, rights of way, and roads as open transportation network.
2. No road, trail, or RS 2477 right of way should be closed unless public safety or health demands its closing and the proper analysis and disclosure, in consultation with the County and private property owners, is completed prior to closure.
3. Request that agencies notify the County of any planning process or activity that restricts, eliminates, or increases access to federal or state lands and allow the County to initiate coordination and cooperation to resolve potential conflicts with the County’s objectives, principles, and policies prior to taking action.
4. Preserve stock trails as valid access routes for the purpose of trailing livestock between grazing areas.
5. All formally established BLM and USFS public roads, public trails, and rights of way should be considered valid unless formally abandoned.



6. The County considers long term (greater than one year) road closures a major federal action that significantly affects the quality of the human environment. Thus, a road on federal lands may not be closed until a full NEPA analysis has been completed including public review and coordination with the County. Should the agency believe a road closure falls under a categorical exemption, the County should be consulted.
7. Johnson County should be notified of any temporary road closures.
8. Roads on federal lands should remain open to provide for the economic benefit, use, and safety of the public. Where road closures are proposed, specific justification for the proposal should be given on a case-by-case basis, and the proposal should be discussed in coordination with Johnson County.
9. Support legal public access to federal lands for all beneficial uses as long as it does not infringe on private property rights.
10. The County considers all stock trails to be R.S. 2477 roads and these roads are not abandoned unless abandonment is explicitly established by the County.
11. It is the desire of the County to keep all forest roads within the designated 2001 Roadless Area Conservation Rule, so there is no net loss of roads within these designated areas.

2.3 SPECIAL DESIGNATION AND MANAGEMENT AREAS

History, Custom, and Culture

There are several USFS and BLM special designation and management areas within Johnson County (Figure 3). A map of management areas for the BHNF can be found in Appendix A.

Resource Assessment and Legal Framework

Areas of Critical Environmental Concern (ACEC)

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). An ACEC designation must go through the NEPA land use planning process and may be revisited through subsequent land use planning, revision, or amendment. ACECs and other special designations may compete with natural resource-based businesses that are important to the County’s economy, like grazing and mining.

There are currently no designated ACECs within Johnson County.

Research Natural Areas (RNA)

Research Natural Areas (RNAs) are special management areas that reflect the natural condition of an ecosystem, allowing the agency to see how the ecosystem would be without their involvement. These RNAs serve three functions for the Forest Service: benchmark reference areas; protect biological diversity; and provide research sites for determining how an ecosystem function. The BLM considers RNAs to be a type of ACEC (BLM, n.d.-a). Recreation in RNAs is not encouraged because it can alter the natural state of the area, but natural fire frequencies and intensities are desirable to maintain the natural cycles in the ecosystem. There are currently no



RNAs in the County, but four RNAs were analyzed in detail in the USFS 2005 Land and Resource Management Plan. These include Lake McClain (8,250 acres), Mann Creek (7,500 acres), Leigh Canyon (1,500 acres), and Pheasant Creek (9,090 acres). (USFS, n.d.-b)

Special Recreation and Extensive Recreation Management Areas (SRMA & ERMA)

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 trailheads for hikers, mountain bikers, or off-road vehicle users. Both SRMAs and ERMAs exist in Johnson County (Table 1).

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. SRMAs and ERMAs within Johnson County include:

Table 1. SRMAs and ERMAs Located within Johnson County.

SRMAs	ERMAs
Burt Hollow Management Area	Face of the Bighorns/North Fork
Dry Creek Petrified Tree Management Area	Gardner Mountain
Hole-in-the-Wall Management Area	Kaycee Stockrest
Middle Fork Powder River Management Area	Powder River Basin
Mosier Gulch Management Area	South Bighorns

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 Johnson County designated or proposed as wild, scenic, or recreational within the National Wild and Scenic Rivers System (National Wild and Scenic Rivers System, n.d.-a, n.d.-b).

While no wild and scenic river designations are present in Johnson County, the Tongue River in neighboring Sheridan County is managed for retention of its outstanding remarkable values for Wild and Scenic River recommendations. The Little Bighorn River was nominated for Wild and



Scenic but Congress never acted on the proposed designation. (Forest Service: Rocky Mountain Region, 2005)

Wilderness Study Areas (WSA)

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

The four characteristics that must be met for designation as a WSA or Wilderness Area:

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: (1) they are identified by the wilderness review as required by Section 603 of FLPMA; (2) they are identified during the land use planning process under Section 202 of FLPMA; (3) or they are established 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]).



Johnson County has been involved in the Wyoming Public Lands Initiative (WPLI) which is “a voluntary, collaborative, county-led process intended to result in one, multi-county legislative lands package that is broadly supported by public lands stakeholders in Wyoming. The ultimate goal 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 landscape.” (WPLI, 2015, p. 201) Johnson County has provided recommendations for the North Fork and Gardner Mountain WSAs which are summarized below in the appropriate WSA description. Additional information on the WPLI recommendations can be found [here²](#).

Fortification Creek WSA

Fortification Creek WSA encompasses 12,419 acres of BLM-administered land 36 miles from Buffalo on the eastern border of the County, with a 640-acre state land inholding. This WSA contains elk crucial winter range. The Fortification Creek WSA does not have direct public access and is only accessible by foot or horseback via a nine-mile route off Fortification Road. This WSA is closed to motorized travel and mineral extraction and entry. (BLM, n.d.-b).

The WPLI Committee recommended that the Fortification Creek WSA be released from a WSA and no longer be eligible for Wilderness Designation. The WPLI Committee recommended the area be known as the Fortification Creek Management Area with the following management intentions: (WPLI, n.d.-a)

- Inclusion of a map of the present Fortification Creek WSA showing the exterior boundary.
- Management area represents only federal lands within this boundary.
- No new surface disturbance unless needed for fire suppression.
- No new permanent roads.
- Maintain existing characteristics.
- Existing uses continue such as grazing, hunting, and recreation.
- No motorized or mechanical vehicles allowed other than reasonable fire suppression, weed and pest control, wildlife and stock water, or emergency needs.

Gardner Mountain WSA

Gardner Mountain WSA encompasses 6,423 acres of BLM-administered land 40 miles from Buffalo, south of Bighorn National Forest. Two important trout waters-fisheries of regional importance flow through the WSA, the Red Fork of the Powder River and Beartrap Creek. The WSA is also fly over habitat for bald eagle and peregrine falcon migration routes. There is no direct public access available for Gardner Mountain WSA, but the area can be accessed via the Gardner Mountain Foot and Horse Trail and cross-country travel. (BLM, 2017a)

The recommendations from the WPLI Committee are that the Gardner Mountain WSA be released from a WSA and no longer be eligible for Wilderness Designation. The WPLI Committee recommended the area be known as the Fraker Mountain Management Area with the following Legislative Management Criteria: (WPLI, n.d.-a)



- Area boundaries as shown on map
- Designation to only affect Federal land with no effect on private or state lands within or adjacent to Fraker Mountain Management Area
- Recommend non-motorized/mechanized vehicle usage except for:
 - Fire suppression
 - Livestock management and infrastructure
 - Forest health and restoration
 - Wildlife habitat management
 - Emergency needs
 - Control of noxious and invasive species
- No energy development or mining leases
- Existing uses continued
- Management purposes are to maintain the area’s non-motorized/back country recreational, cultural, ecological, watershed, grazing, and wildlife values
- No development of new permanent roads

North Fork of Powder River WSA

The North Fork of Powder River WSA encompasses 10,089 acres of BLM-administered land 30 miles from Buffalo, south of Bighorn National Forest. This WSA acts as migration habitat for falcons, hawks, and eagles, and as elk winter habitat. Wyoming Game and Fish Department (WGFD) classified areas in the Powder River as fisheries of statewide importance. There is no direct public access available for North Fork of Powder River WSA as access is controlled by private landowners. (BLM, 2017b)

The recommendations from the WPLI Committee are that the North Fork Powder River WSA be released from a WSA and no longer be eligible for Wilderness Designation. It would be known as the North Fork Management Area with the following Administrative Management Criteria: (WPLI, n.d.-b)

- Area boundaries as shown on map
- Designation to only affect Federal land; no effect on private or state lands within or adjacent to NFMA.
- Recommend non-motorized/mechanized vehicle usage except for:
 - Fire suppression
 - Livestock management and infrastructure
 - Forest health and restoration
 - Wildlife habitat management
 - Emergency needs
 - Control of noxious and invasive species
- No energy development or mining leases
- Existing uses continued
- Management purposes are to maintain the area’s non-motorized/back country recreational, cultural, ecological, watershed, grazing, and wildlife values
- No development of new permanent roads



- No recreational development

Wilderness

Cloud Peak Wilderness

The Cloud Peak Wilderness lies within the Bighorn National Forest. Motorized and mechanized use is not allowed, meaning access is only possible via foot or horseback. The Cloud Peak Wilderness encompasses approximately 189,000 acres, with 103,000 acres in Johnson County (USFS, n.d.-c).



Recommended Wilderness

A Recommended Wilderness Area is an area the Forest Service has found to meet the characteristics of a wilderness area and deemed suitable for inclusion in the Wilderness System. These areas are recommended to Congress for inclusion in the National Wilderness Preservation System and are managed in a manner that protects and preserves wilderness characteristics until Congress makes its decision. Uses and activities are restricted in the area to maintain these

characteristics. Current permitted activities may continue until designation occurs, unless such activity diminishes the wilderness characteristics. (USFS, n.d.-b)

Rock Creek Roadless Area

The Rock Creek Roadless Area is located northwest of Buffalo in the Bighorn National Forest and borders the Cloud Peak Wilderness. This area was recommended for inclusion by the USFS in the National Wilderness Preservation System in the USFS 2005 Management Plan. The recommended area encompasses 33,587 acres and, if designated, would be added to the Cloud Peak Wilderness (BHNF, 2005, p. 200).

Lands with Wilderness Characteristics (LWC)

Section 201 of FLPMA requires the BLM to maintain, on a continuing basis, an inventory of all federal 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 federal 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 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.

The Buffalo RMP was updated in 2015 after release of the supplemental draft Environmental Impact Statement (SEIS) and RMP in 2013. There are designated lands managed as LWCs in the 2018 Maintenance Action. (BLM, 2015)

The only area designated as LWC within Johnson County is the 6,865-acre Face of the Bighorns.

Inventoried Roadless Areas (IRA)

Inventoried Roadless Areas (IRA) are portions of National Forest that were identified in the USFS 2001 Roadless Area Conservation FEIS 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 Roadless Areas, logging is greatly restricted.

There are nine roadless areas within the BHNF in Johnson County: Roadless Area B029 – Piney Creek, Roadless Area B030 – Little Goose, Roadless Area B032 – Rock Creek, Roadless Area B033 – Grommund Creek, Roadless Area B036 – Hazelton Peaks, Roadless Area B048 – Cloud Peak Contiguous South, and Roadless Areas B054, B056, B057 – Cloud Peak Contiguous East (fragments). A description of each roadless area can be found in Appendix C of the 2005 Bighorn National Forest Final EIS for the Revised Land and Resource Management Plan. (Forest Service: Rocky Mountain Region, 2005)

In 2017, the Bighorn Forest Roadless Collaborative released a final report on recommendations for the roadless areas within the Bighorn National Forest. This report discussed the inconsistencies between the IRAs and the 2005 BHNF Forest Plan. There were two recommendations given to the Wyoming Governor’s Office for consideration. Recommendation 1 was that the BHNF Forest Supervisor, after consultation with the Governor’s Office and the local County Commission and through the NEPA process, may authorize road construction and reconstruction or timber harvest (cutting, sale, or removal) within IRAs using eleven different exceptions that are lined out in the final recommendation report. The second recommendation was that the boundaries of roadless areas in the BHNF should be redrawn in accordance with the inventory completed by the BHNF, with the exception of the Schoolhouse Park/Soldier Park areas west of Highway 16. (Ecosystem Research Group, 2017)

Currently there are 620,663 acres of IRAs within the BHNF, 390 miles of system road in IRAs, and 91,312 acres of suitable timber in IRAs. The collaborative’s recommendation would provide 491,062 acres of IRAs, 11 miles of system road in IRAs, and 46,762 acres of suitable timber in IRAs. (Ecosystem Research Group, 2017)



Scenic Routes

Cloud Peak Skyway

Also known as US Route 16 in Wyoming, the Cloud Peak Skyway crosses Powder River Pass, the highest pass in the forest at just over 9,600 ft within the southern section of the Bighorn National Forest (Cloud Peak Skyway, n.d.)

Resource Management Objectives:

- A. Designation and management of special designation or management lands are coordinated with Johnson County and adjacent landowners.

Priorities:

1. Ensure that Federal agencies comply with their respective coordination mandates when making wilderness recommendations and developing wilderness inventories.
2. Proposals for ACEC designations should strictly adhere to the relevance and importance criteria, and the BLM should demonstrate, using credible data, the need for an ACEC designation to protect the area in question and prevent irreparable damage to resources or natural systems.
3. Ensure that decisions regarding Wilderness Study Area designation by Congress consider the recommendations put forth by the WPLI Committee.
4. Management of special designation areas should be coordinated with the County and consistent to the maximum degree with the Johnson County NRMP.
5. Support the use of herbicides to control noxious weeds in wilderness areas.
6. Federal agencies consult and coordinate with Johnson County as early as possible when considering the designation of new Areas of Critical Environmental Concern (Wild and Scenic Rivers, National Monuments, Wilderness and Wilderness Study Areas (WSAs), Roadless Areas, and Lands with Wilderness Characteristics (LWCs).
7. Proposed Wild and Scenic River designations analyze impacts to the County's custom, culture, and economy.
8. The County should be notified as early as possible and be included as a cooperating agency if the Secretary of the Interior is considering whether to designate a Wild and Scenic River in the County.
9. The County supports State efforts to petition the USFS for a Wyoming specific Roadless Rule.
10. Restrictive management of roadless areas is discouraged and multiple uses should instead be allowed.
11. Responsible development of natural resources within roadless areas is encouraged.
12. The County supports construction of temporary roads necessary to service natural resource development.



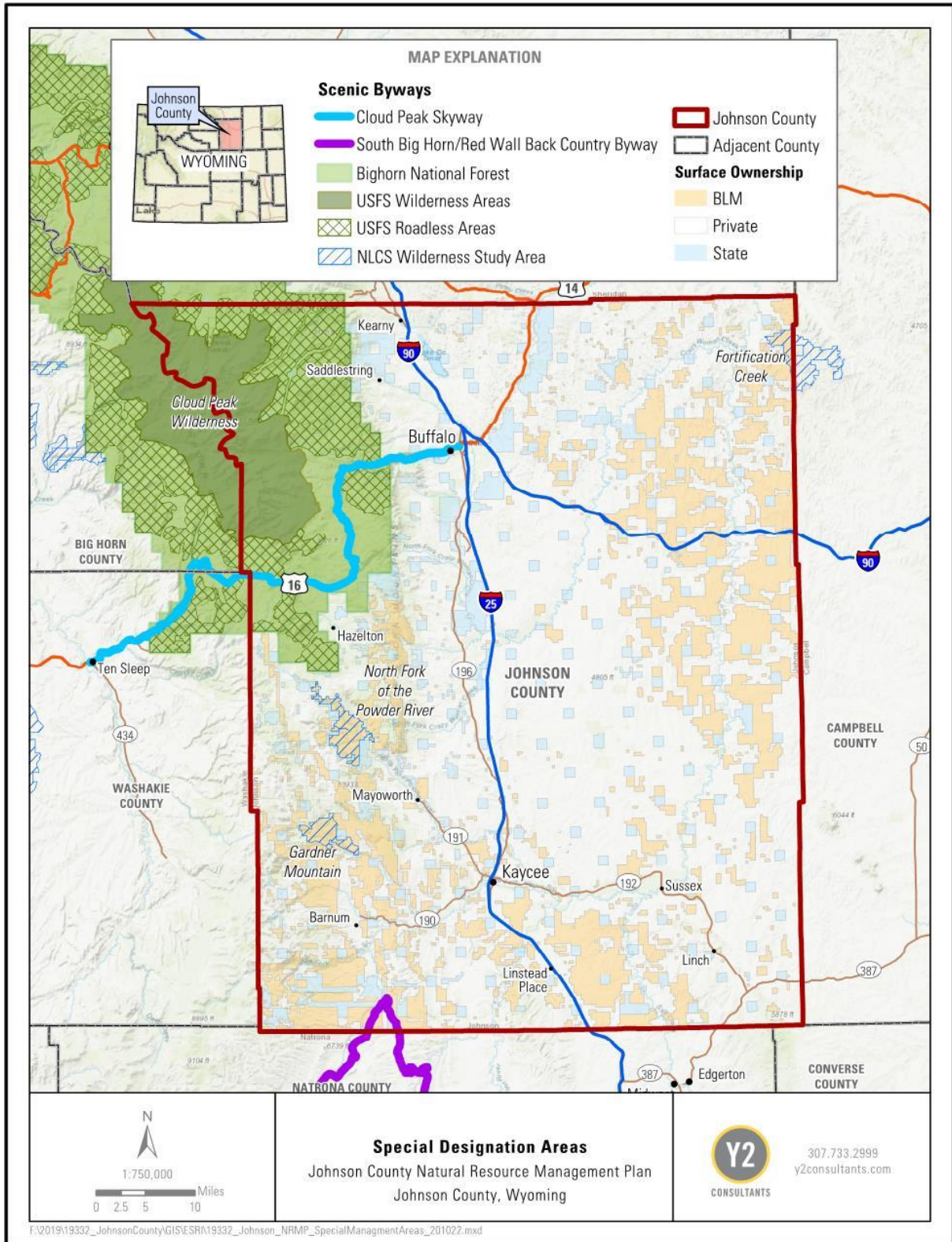


Figure 3. Special Designation Areas within Johnson County.



2.4 WILDFIRE SUPPRESSION, FUELS MANAGEMENT, FIRE REHABILITATION AND COMMUNITY WILDFIRE PLANNING

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 fires used as a management tool, and naturally occurring fires. Coal-seam fires have also occurred in Johnson County. Wildfires have damaged the County watershed, timber, grazing lands, wildlife habitat, and recreational activities that rely on healthy forests and rangelands in addition to endangering human health and safety and lost economic opportunities (Figure 4).

Resource Assessment and Legal Framework

Proactive planning for response to a wildland fire event is critical to the protection of Johnson County; its citizen's health, safety, welfare, and private property; and forest and rangeland health. The BHNH has coordinated with local fire agencies in the past to manage wildfire. A high degree of coordination between Federal, State, and Local agencies is necessary for maximum prevention and suppression of wildfire.

The [2017 Johnson County Community Wildfire Protection Plan](#)³ (JCCWPP) outlines the goals and objectives for wildfire management across the County. The JCCWPP describes management for each section of the County, and further evaluates action items and previous mitigation efforts. The goals for management include:

- Attain conditions that allow for safe and effective protection from wildfire of all homes in Johnson County, with minimal intervention of the fire service.
- Collaboration of the Fuels Mitigation Group and other interested parties.
- Restore and Maintain Landscapes, and Fire Adapted Communities. (Shell & Johnson County, 2017)

The [Buffalo Municipal Watershed Wildfire Hazard Mitigation Assessment](#)⁴ (BW-HMA) created in 2017 focuses on hazard analysis. The city of Buffalo's municipal water supply is sourced from a heavily forested watershed in the Bighorn Mountains and is particularly vulnerable to wildfires. The plan outlines site-specific forest-management treatment areas to prevent or minimize postfire hydrologic impacts in drainage areas that contribute to the municipal supply reservoir and infrastructure for the city of Buffalo. After the BW-HMA was completed, the Bighorn National Forest, along with interagency partners, began implementing the Buffalo Municipal Watershed project, which encompasses approximately 38,000 acres, with timber sales, thinning, prescribed fire, and aspen regeneration treatments. (RESPEC, 2017)

Management of the county's forest resources is important as over-mature, over stocked, and stagnant conifer forests with extensive ladder fuels create wildfire risks. These stressed trees are subject to insects, disease, and fire and may have a negative impact on carbon sequestration. The [2019 Rock Mountain Region Aerial Survey](#)⁵ showed that the BHNH is relatively healthy and that there were only a few areas with mortality and/or defoliation (USFS, 2019).



Table 2. Fire Occurrences in Excess of 100 acres in Johnson County from 2003 to 2020.

Year of Fire	Fire Name	Acreage
2003	Schoonover Fire	636
2003	Big Spring	4,370
2003	Big Spring	6,471
2003	Ditch Creek	432
2005	The Horn Fire	114
2006	Sawmill	31,352
2006	Outlaw 2	12,745
2007	Petrified Forest	123
2009	DDG 2 Mile	355
2009	Reno Hills	1,585
2010	Petrified	1,022
2010	Albright	2,351
2010	Harriet 2	166
2010	Christiansen	968
2011	Cat Creek	2,276
2012	Moore	115
2012	Gilead	16,062
2012	Jackrabbit	281
2012	Antelope Draw	149
2012	Cato	50,564
2014	West Range	2,288
2015	Antelope Draw	214
2015	Cather	594
2016	Dump	804
2016	TTT	159
2016	Lower Piney	367
2017	Greub Road	207



2017	Mill Iron	187
2017	Tisdale	148
2017	Linch	150
2017	Wallows	502
2018	Evans Draw	178
2020	Eckland Fire	482

Resource Management Objective:

- A. Wildfire, fuels, and fire rehabilitation are managed promptly and effectively using credible data in coordination with the [Johnson County Community Wildfire Protection Plan³](#) (JCCWPP).

Priorities:

1. Federal agencies coordinate with local fire agencies. The USFS shall adhere to all requirements set forth in the Cooperative Forestry Assistance Act 16 USC § 2106.
2. Federal agencies incorporate local fire association plans (Johnson County CWPP, Buffalo Municipal Watershed Wildfire Hazard Mitigation Assessment) into their fire suppression and control plans and support wildfire suppression activities of local fire departments.
3. Fire suppression efforts are maximized through full coordination, communication, and cooperation between federal, state, and local fire-suppression units.
4. The County supports coordination between Federal agencies and the County to promote and optimize fire preparedness within communities across Johnson County.
5. Coordinate with other agencies to implement insecticide and herbicide treatments, livestock grazing, biomass fuel removal, slash pile burning, and prescribed burning as fire control tools.
6. Coordinate and communicate temporary fire restrictions based on fire hazard designations to minimize the potential for human caused wildfires with other suppression entities in the County.
7. Rehabilitate forests and rangelands damaged by wildfires as soon as possible for wildlife habitat and to reduce the potential for erosion and introduction of invasive or noxious weeds. Management tools can include, but are not limited, to livestock grazing, chemical treatment, and mechanical treatments that promote ecosystem health.
8. Support the Department of Interior's Secretarial Order 3336-Rangeland Fire Prevention, Management, and Restoration and require the BLM to comply with the order and subsequent revisions, reports and instructional memos.
9. Consultation and coordination with Johnson County is expected on proposed changes and updates to the Fire Management Plans on federal lands.
10. Allow adaptive grazing management practices and include these practices in term permits, allowing for flexible management practices that decrease fuel loads on the landscape, particularly in areas with heavy grass understory.



11. Post-fire objectives should be consistent with site potential as defined in approved Desired Future Conditions or Ecological Site Descriptions. Require the use of credible data as previously defined to make these determinations.
12. Grazing rest prescriptions related to either wildfires or prescribed burns will be determined on a site-specific basis. Post-fire grazing will not be limited when post-fire monitoring and evaluation produces relevant, accurate data demonstrating that grazing will not unduly harm the range.
13. Promote the prompt rehabilitation of harvested areas and areas affected by wildfire, including salvage logging operations. Temporary roads are allowed and access to additional areas is available through these temporary roads.
14. Coordinate with the County in mapping and management of coal-seam fires.



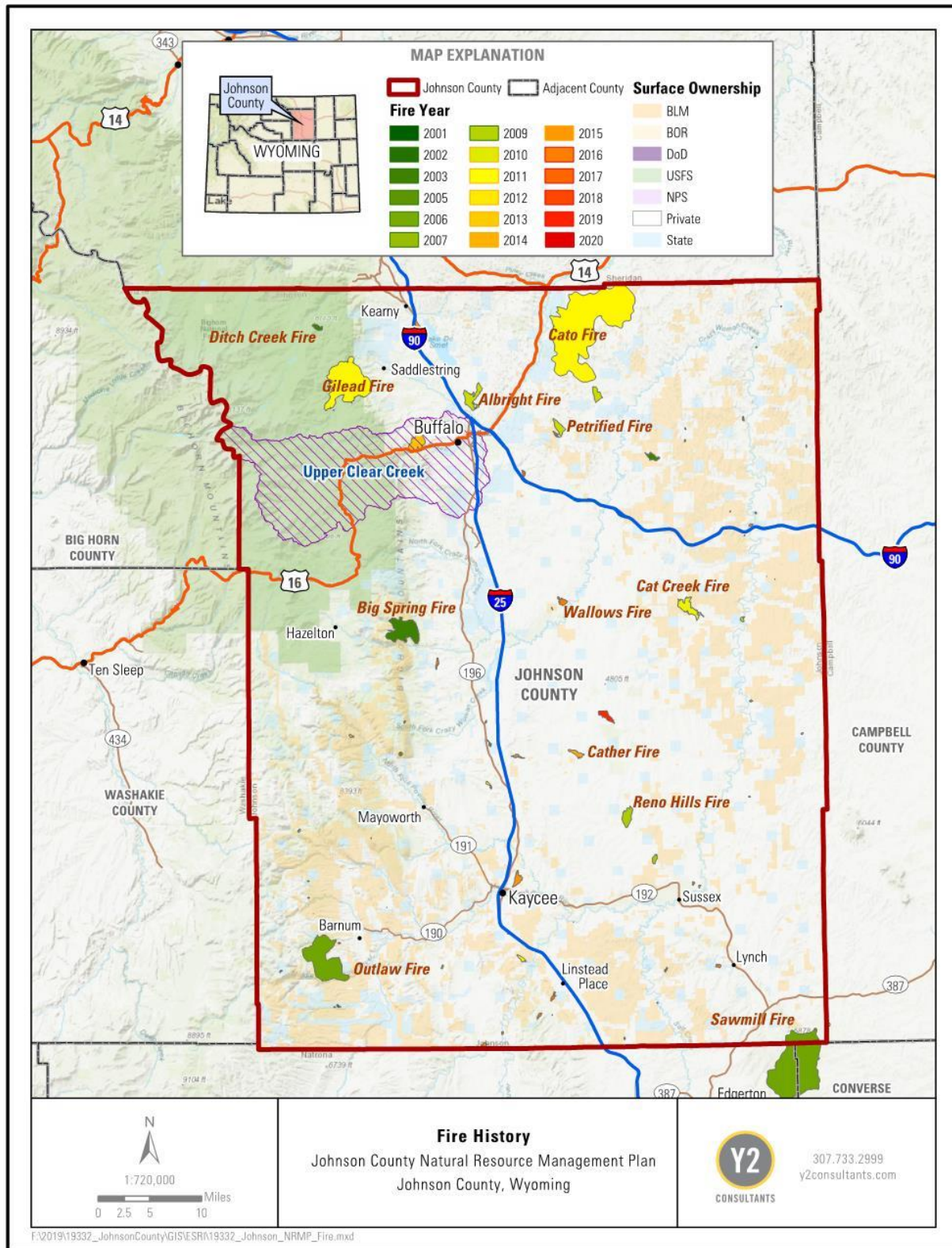


Figure 4. Fire History of Johnson County.



2.5 FOREST MANAGEMENT

History, Custom, and Culture

The beneficial use of forest natural resources has always been a part of Johnson County's economy, customs, and culture. Early citizens relied on forest resources for timber for buildings, corrals, fences, and fuel. Logging occurred through the years on both federal and private lands. Johnson County recognizes that historic logging took place within the County as part of a historic stable timber-harvesting program. A healthy forest ecosystem provides employment and economic benefit for individuals and businesses in the County.

The Bighorn Forest Reserve was established in 1897 and was managed by the Department of Interior until 1905, when the USFS was established. In 1905, the Forest Reserve became the Bighorn National Forest. Timber harvesting in the County historically paid for the maintenance of forest roads and allowed more public access and multiple use of the forests. Johnson County historically had two sawmills on USFS lands which are currently inactive. Currently, the main harvesting of forest products includes commercial timber harvest, firewood, posts and poles sawtimber, sawlogs, and Christmas trees (USFS, n.d.-d). However, several timber sale contracts have been issued and fuels mitigation projects in the wildland urban interface are being conducted.

In 2019 the Bighorn National Forest offered 17,903 cubic feet of timber and 3,256 cords of firewood for sale. Additionally, there were 2,584 Christmas tree permits issued. (USFS, n.d.-a)

Resource Assessment and Legal Framework

Forested lands within Johnson County are 75% federal and 25% State and private. Most forested public lands are concentrated in the southern Bighorn Mountains and along the eastern face of the Bighorns. Forested public lands are valuable for wildlife habitat and protection of watershed and recreational values. Commercial species on forested BLM lands include ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), Englemann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and lodgepole pine (*Pinus contorta*). There are currently 329,986 acres of USFS forested lands, 58,259 acres of BLM forested lands, and 92,729 acres of State and private forested lands. Out of the 329,986 acres of USFS forested lands approximately 32% (104,011 acres) are in Wilderness and an additional 134,428 acres (41%) are in Roadless Areas, meaning that 73% of USFS forested lands in Johnson County are not managed for commercial timber resources. Out of the 58,259 acres of BLM forested lands, 26,741 acres or 46% are in Wilderness Study Areas and Lands with Wilderness Characteristics. Of the 388,24 acres of federal forested lands within the county approximately 68% or 265,180 acres are not available for commercial timber harvesting. (Wyoming State Forestry, personal communication, 2020)

Within the Buffalo Municipal Watershed there are 71,865 acres of which 47,802 acres or 67% are in Wilderness or Roadless designation. More information on roadless areas within the county can be found in the above [Section 2.3 Special Designation and Management Areas](#).



Resource Management Objective:

- A. Forest lands are managed under multiple use that promotes the timber industry, grazing, fuels management and recreation and benefits the economy of the county's communities.

Priorities:

1. Encourage policies that support the timber industry and provide continued economic benefit to the citizens of Johnson County. Forest management shall follow the mandates of the OAA and adhere to MUSY, as well as the NFMA, NEPA, and the ESA.
2. It is the desire of the County to sustain all forest roads within the designated 2005 RACR, so there is no net loss of roads within these designated areas.
3. Forest management should support coordinated timber harvest and thinning methods and/or prescribed fire to promote forest health, reduce disease and insect infestation, reduce wildfire impacts, and prevent waste of forest products while supporting the economy of Johnson County for future generations.
4. Salvage harvest when necessary due to insect/disease epidemic, blowdown, or post-fire situations using the appropriate categorical exclusions.
5. The County supports federal Payments in Lieu of Taxes (PILT) to Johnson County.
6. Access to forest products such as firewood, building materials, and Christmas trees should be ongoing. Access to these sites should be through an open roads and cross-country travel system.
7. Agencies within the County use the authority 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 economically and efficiently treat and protect timber resources within Johnson County.
8. Forest management projects are coordinated and communicated among local land management agencies, including federal, state, private, and county lands to improve the scale and scope of each project.
9. Support the use of the Wyoming Forestry Best Management Practices (BMPs) and Water Quality Protection Guidelines for vegetation treatments.



2.6 LAND EXCHANGES

History, Custom, and Culture

Exchanging private land or state land for public land 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:

1. Acquisitions must be consistent with the mission and land use plans of the agency
2. Public interests must be served by the land exchange
3. An agency may accept title to non-federal land if the land is located 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
4. 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
5. 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 requires 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).

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 plan of USFS and BLM land 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, State, and public lands have occurred within Johnson County in recent years which has allowed more public access to areas. In most cases the surface ownerships are exchanged but the sub-surface mineral rights stay with the private landowner.

Resource Assessment and Legal Framework

The Bighorn National Forest RMP considers the possibility of land exchanges, outlining the need to balance resource values, pursue management goals, and consider effects on sensitive species. The plan also highlights the usefulness of land exchanges in reducing adverse impacts to lynx. The RMP provides guidelines for land adjustment activities:

- Reduction of Forest Service administrative costs and improvement of management efficiency. This includes: reducing miles of landline boundaries and number of corners, eliminating potential encroachments, special uses, title claims, rights-of-way grants and easements, numbers of allotments and intermingled ownership livestock pastures, and other factors which decrease administrative costs and improve management efficiency.
- Reduction of conflicts between Forest Service and private landowner objectives, especially when conflicts are adversely impacting National Forest System management. (Bighorn National Forest RMP, 1-45, 1-62, 1-63).

Resource Management Objective:

- A. Land exchanges that are mutually beneficial to private landowners, Federal and state agencies, and the public are completed in a timely and cost-efficient manner.

Priorities:

1. Federal agencies proactively identify potential land exchanges that will consolidate land ownership type and reduce isolated federal land parcels.
2. Federal agencies prioritize land exchanges in areas where there may be resource or management conflicts between federal managers and the neighboring private or state landowners.



3. Voluntary land exchanges and or other similar programs are pursued as a primary way to encourage access to landlocked federal lands as opposed to the use of eminent domain or other involuntary methods.
4. Federal agencies should attempt to consolidate and combine land exchanges when possible to reduce overall costs. However, such consolidations should not cause undue delay on smaller land exchange proposals.



CHAPTER 3: GEOLOGY, MINING, AND AIR

3.1 GEOLOGY

Johnson County has a rich geologic history. There are many locations throughout the County where geologic formations exist and display the history of the area. These canyon and mountain formations contain cultural and recreational value.

Paleozoic Era rock reflects a marine transgressive/regressive deposition; these formations are dominated by marine formations with occasional sandstones and shales from beach and shore conditions. Erosion during this time created gaps in the formations. The early Mesozoic Era was characterized by shallow seas that deposited sandstones, siltstones, and shales. These depositions are the Dinwoody, Chugwater, Gypsum Springs, and Sundance formations. (Libra et al., 1981)

A transition to a terrestrial environment occurred during the Jurassic Period, and shales and sandstones of the Morrison Formation were deposited in shallow marine and marshy environments. During the Cretaceous Period thousands of feet of interbedded sandstones and thick shales were deposited under terrestrial, eolian and fluvial conditions. These Cretaceous formations include; the Cloverly, Mowry – Thermopolis, Frontier, Cody, Mesaverde, Meeteetse, and Lance formations. (Libra et al., 1981)

The Bighorn Mountains were formed in the late Cretaceous period. Mountains uplifted by compressional forces, provided a source for the more than 10,000 feet of Tertiary sediments. These deposits are comprised of conglomerates, sandstones, and shales that were deposited in alluvial fans, streams, or lake environments. (Blackstone, Jr. & Huntoon, 1984)

The Bighorn Mountains in the northwest portion of Johnson County contain older Pre-Cambrian rock as well as Paleozoic and Mesozoic sedimentary rocks. From the southwestern County border to Interstate 25 Mesozoic sedimentary rocks dominate the geology. Cenozoic sedimentary rocks characterize the rest of the County. (Clear Creek Conservation District, 2017)

The most recent deposits are primarily alluvial and terrace deposits, with glacial influence, occurring primarily in the Pleistocene and Quaternary periods.



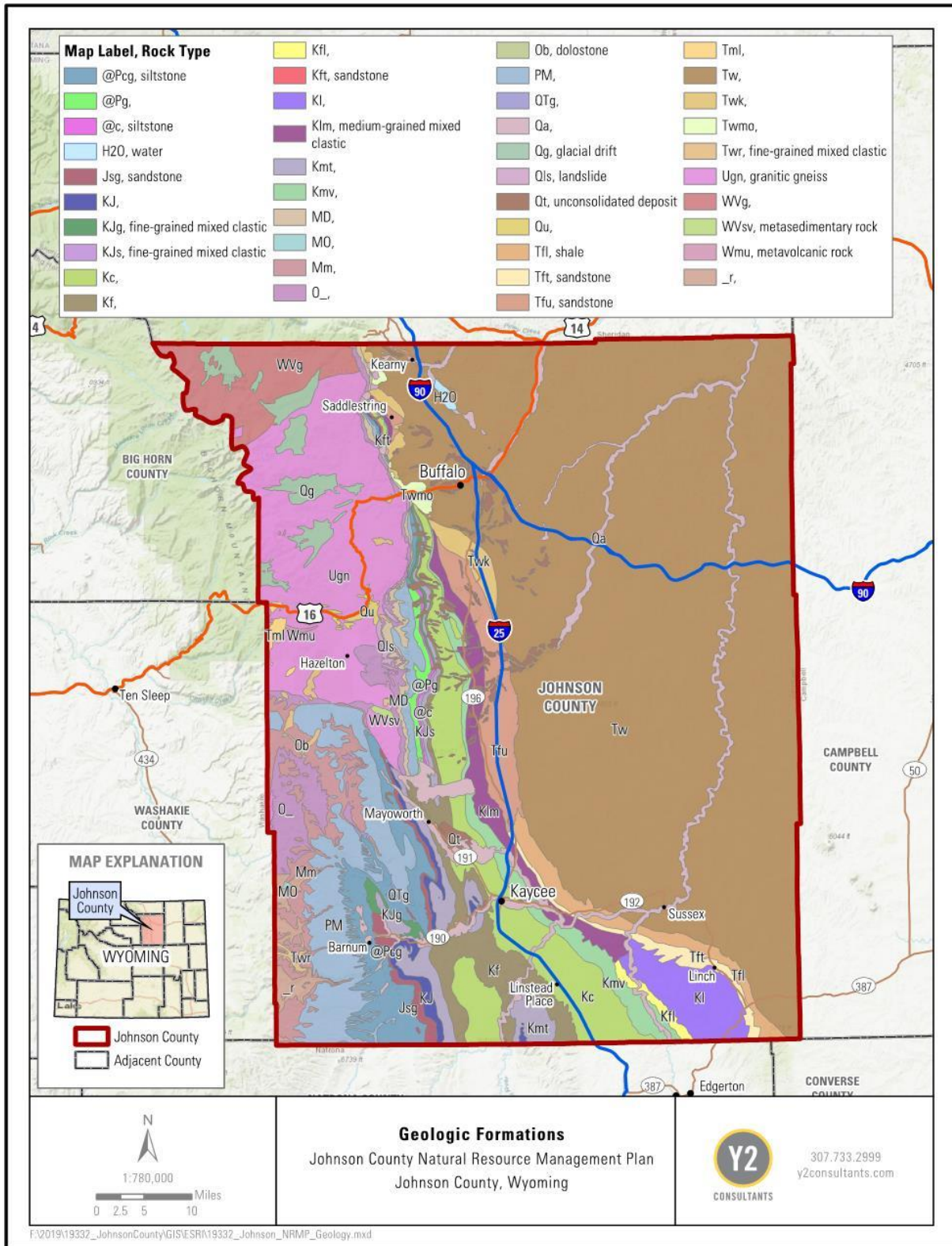


Figure 5. Johnson County Geologic Formations.



3.2 SOILS

History, Custom, and Culture

Healthy soils sustain plant communities, keep sediment out of streams, and dust out of the air. Land managers of federal 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. The two Conservation Districts within Johnson County work to promote the conservation of soil and water resources within the districts. See [Section 2.1 Land Use](#) for more information.

Anthropogenic land disturbance as well as 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)

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. There are five levels or “Orders” of soil surveys depending on the level of detail involved. Order three is typical for most federal 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.-b). The soil survey mapping of Johnson County is current and published to Web Soil Survey (NRCS, n.d.-a). The Bighorn National Forest also has a soil survey that was completed in 1986 (Nesser, 1986). The general soil map units for Johnson County are depicted in Figure 6 below.

Resource Management Objective:

- A. Soil quality and health is maintained and conserved through best management practices.

Priorities:

1. Support projects and policies which improve soil quality and ecology.
2. Support erosion control as a means of flood control.
3. For new soil disturbing projects, support implementation of BMPs to manage runoff, preservation and maintenance of topsoil, and stabilize soils on site.
4. Land use designations that eliminate or reduce the opportunity for implementation of practices that can improve soil health are not supported.
5. Johnson County supports and encourages the use of natural processes as key to site reclamation for soil health and biodiversity. Encourage the implementation of BMPs for watershed management.
6. The County encourages the removal of drill mud from drill sites to designated waste sites.



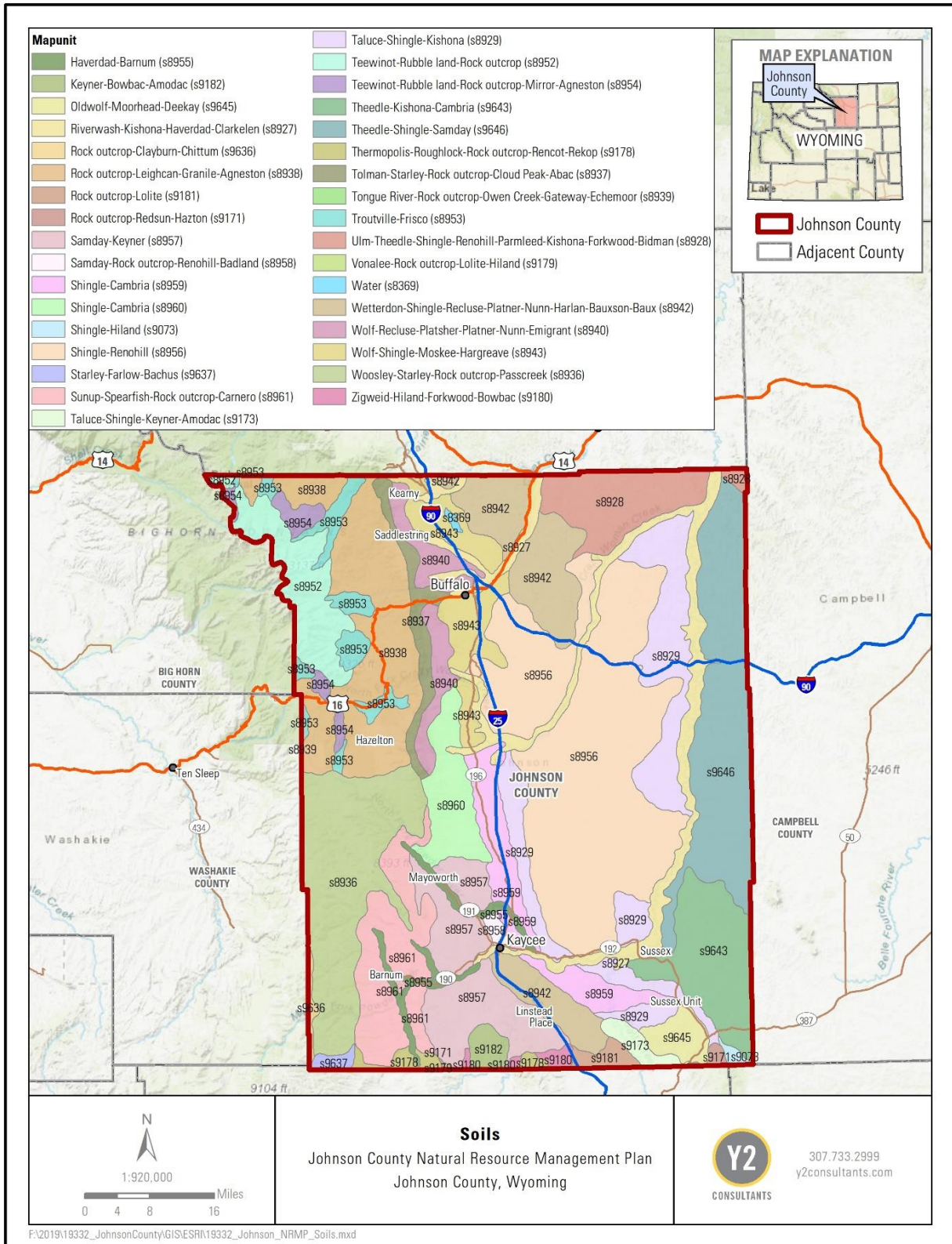


Figure 6. Soils Mapped for Johnson County.



3.3 MINING & MINERAL RESOURCES

History, Custom, and Culture

Mineral production, namely coal, has been part of Johnson 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. Energy (i.e. coal, oil, and gas) production is a large corner of industry in Johnson County and provides jobs to hundreds of people throughout the region. This industry serves a crucial role in the development of the County.

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 Johnson County's domestic production. There are 21,000 records of mining claims managed through the BLM and 348 records of mines listed under U.S. Geological Survey (USGS). Of the listed claims, 7% are active (The Diggings, 2020).

Other minerals present in the County include uranium, bentonite, granite, limestone, scoria, sand and gravel, marble, gneiss, gypsum, and amphibolite (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005).

Coal

Coal seams in Johnson County are too deep for strip mining. However, there has been exploration and some production spikes from coal-bed methane. In the early 2000s, coal-bed methane was huge in the Powder River Basin and for a time this area was the largest producing natural gas field in the state, at more than 1 billion cubic feet per day. (Bleizeffer, 2015; Farquhar, 2014)

Uranium

Uranium was first discovered in the Pumpkin Butte area in 1951, by J.D. Love of the U.S. Geological Survey (Gregory, 2016). Uranium deposits in Johnson County are located within the Fort Union and Wasatch Formations. The uranium occurs in roll front type deposits found at the boundary between reduced and oxidized sandstone. To date, approximately 7 million pounds of uranium have been recovered from within Johnson County. There are currently two permitted uranium in-situ recovery (ISR) facilities within Johnson County, Willow Creek ISR Project and Nichols Ranch ISR Project. In addition, there are several known prospects within the Pumpkin Butte and Kaycee Mining Districts. ISR mining utilizes in-situ chemical dissolution to recover uranium using injection and production wells completed in the mineralized sandstone.

Bentonite

Bentonite deposits in Wyoming comprise about 70 percent of the world's known deposits (Sutherland, 2014). Bentonite mining within Johnson County occurs in the Kaycee District, located west and southwest of Kaycee. Deposits can be found in the Frontier Formation, Carlile Shale, Greenhorn Formation, Belle Fourche Shale, Mowry Shale, Aspen Shale, Muddy Sandstone, Newcastle Sandstone, Thermopolis Shale, Skull Creek Shale, and Bear River Formation. The



highest quality Wyoming bentonite is found primarily in the Upper Cretaceous Mowry Shale (Clay Spur Member).

Bentonite is a fine clay material mined from the earth, formed by the decomposition of volcanic ash deposited millions of years ago in an ancient inland seaway. It is widely used as a drilling mud additive for oil, natural gas, and water wells; other uses include cat litter, cosmetics, a binding agent in animal feed, and a foundry-sand bond in iron and steel foundries. For economic reasons, surface mining generally extends to depths no greater than 50 feet. Bentonite mined from open pits is blended, ground, dried, and processed into various products at several mills in the state.

Granite

Granite is found in the northwest corner of Johnson County in the Big Horn Mountains. This rock material is suitable for use as decorative and dimension stone, as well as decorative construction aggregate. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)

Gneiss, Amphibolite, Marble, and Other Minerals

Rock outcrops of gneiss, amphibolite, marble, and other minerals are also evident in much of the Bighorn National Forest, as well as on some private and State lands between Buffalo and the Bighorn National Forest. These materials are also suitable construction aggregate, e.g. railroad ballast. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)

Limestone

Limestone-bearing outcrops are primarily located along the west border and southern half of Johnson County. Limestone is a calcareous chemical precipitate. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)

Scoria

Scoria is derived from coal-bearing rocks that are baked or partially melted by naturally ignited coal fires. This process is considerably more prevalent in areas where coal occurs at or near the surface of the land. Most scoria material in Johnson County is situated within 10 to 15 miles north and east of Buffalo. Scoria is used for construction aggregate and some decorative uses. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)

Sand and Gravel

Larger sand and gravel deposits are found from 8 to 15 miles northwest of Kaycee. However, other deposits are found along and within the Powder River drainage, Clear Creek, Crazy Woman Creek, Salt Creek, and Piney Creek.

The use of sand and gravel is well known for the construction of building foundations, roads and highways, and other site work. In Johnson County, roughly 70% of the county roads are constructed of gravel. Johnson County has been able to use gravel for most county road construction because of the availability and accessibility to gravel in the general vicinity of



Buffalo. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)

Resource Assessment and Legal Framework

The County supports the production of all minerals in an environmentally responsible manner by providing infrastructure and services such as roads, bridges, medical services, and law enforcement. The existing governmental regulatory process has limited development due to necessary collaboration between Local and State authorities. 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 potentially hinder the development of these resources. Improved relations with these agencies are a crucial element for increasing access to new reserves. To secure economic longevity and prosperity of the County, these challenges and interface issues need to be streamlined.

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 Johnson County. Johnson 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. Primary objectives of the County are to establish partnerships with mineral industries and Federal agencies, to increase and share knowledge of the mineral estate, and to develop and foster trust among partners. Through these relationships, the County plans to encourage development of mineral and energy production countywide.

Coal

Most coal reserves in Johnson County are located east of Interstate 25 in the Powder River Basin. The depths to coal deposits vary greatly throughout the county and are generally not considered mineable. However, there are many coal seams which may contain significant natural gas reserves that could contribute to the economy of Johnson County. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005) There are 39 listed coal leases on public lands in Johnson County. All leases are closed. (Coal Fields, n.d.) Currently, there are 4,980 permits that have been issued for coal-bed methane within Johnson County on federal lands. However, the majority of these are completed wells or expired permits. (WOGCC, 2020)

Uranium

BLM is responsible for administering the laws and regulations regarding the availability of all locatable minerals on federal lands, including uranium, as specified under the General Mining Law of 1872, as amended, 43 CFR Parts 3700 and 3800, and the FLPMA. Under these laws and regulations, the BLM is obligated to allow claim holders to develop their claims subject to reasonable restrictions including the restriction that unnecessary or undue degradation may not occur [43 CFR § 3809.411(d)(3)].



BLM authority for land management is derived from the FLPMA. General BLM regulations are described in 43 CFR Subtitle B - Regulations Relating to Public Lands, Chapter II - BLM, USDO. The BLM regulations for the management of mining are included in 43 CFR Subpart 3809, Surface Management, and derive their mandate from Sections 302 and 303 of the FLPMA. Subpart 3809 established procedures and standards for mining claimants to prevent public land degradation and requires reclamation of disturbed areas. It also requires coordination with applicable Federal and State agencies. For operations on public lands other than casual use, 43 CFR 3809 requires BLM approval of a Plan of Operations, a full environmental review, and reclamation bonding.

Uranium mines in Wyoming are permitted through the Wyoming Department Environmental Quality (WDEQ) Land Quality Division and licensed through the WDEQ Uranium Recovery Program.

Bentonite

All bentonite mines in Wyoming are required to obtain a mining permit from WDEQ-LQD. Small mining permits limit operations to not more than thirty-five thousand (35,000) yards of overburden, excluding topsoil, and ten (10) acres of affected land in any one year.

General mining law discussed above is relevant for bentonite mining as well.

Resource Management Objective:

- A. The extraction of coal, oil, gas, bentonite, uranium, and other minerals within the County are continued in a sustainable and ecologically healthy way.
- B. Use of clean and efficient coal powered electricity continues in the County for as long as coal is the most affordable and efficient source of power in the County.

Priorities:

1. Support streamlining permitting processes for new activities within Johnson County to allow for more exploratory drilling and mining and improved access to reserves.
2. Support consideration of all lands within the political jurisdiction of Johnson County as open to mineral exploration and extraction unless specifically precluded by federal, state, or local law.
3. Proposals and decisions to close lands to mineral exploration or extraction is coordinated with the County prior to closure to consider the impact such closure will have on the County's economic viability and resolve potential conflicts with County plans and policies, as required by federal and state law.
4. Decisions pertaining to mining and energy resources within the County affect the health, safety, and welfare of its citizens and the County requests to be notified and be allowed to join as a cooperating agent for proposals affecting mining and mineral resources as early in the process as is allowed by federal law.
5. 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.



6. Require regular (where regular is defined as not less than bi-monthly) 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.
7. 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 should demonstrate an understanding of the County's plans and policies and resolve conflicts with the County's plans.
8. Exploration, development, and mining on federal lands in the County with mineral or energy potential should be governed by adherence to laws which pertain to mining and energy development and production, including but not limited to the General Mining Law of 1872, as amended, FLPMA, and 43 C.F.R. § 3809.
9. Lands not lawfully withdrawn from mineral exploration and development remain available for their designated use. These lands are developed in an orderly manner to accommodate exploration, development, and production. These activities are performed in a manner consistent with the Mining and Mineral Policy Act of 1970.
10. Relevant agencies shall protect the rights of access, occupation, and property of anyone prospecting and/or developing minerals within Johnson County as required by federal and state law so long as protection of such rights do not infringe upon the rights of surface owners through the Wyoming Split Estate Act.
11. The County should be notified early of any proposed closures of prospect and mining of mineral resources and closures shall be coordinated with the County as a cooperating agency.
12. Encourage simultaneous or sequential mineral development with other resource uses in accordance with multiple use management principles in Johnson County, weighing and balancing established mineral rights with other multiple uses in the development coordination process.
13. Encourage mining reclamation to use best management practices (BMPs) instead of requiring restoration to as near the same condition as original. Consider nonnative seeding where beneficial. Mining reclamation and restoration in special management areas is considered on a case-by-case basis.
14. Federal agencies consult with the Johnson County Weed and Pest District to develop a weed management plan for mining and reclamation activities.
15. The County is informed of proposed timelines for decisions involving minerals.
16. The County supports following Secretary of the Interior Order 3355.
17. Ensure that existing air, water, and land quality be maintained and not diminished because of new mineral development activities.
18. Encourage Federal and State agencies to inform the County of mining claims, exploration permits, and applications for permits to drill to the extent allowed by law.
19. Support the continued responsible use of coal as an energy source and its transmission into the area.



20. Encourage implementation of new technology to provide for cleaner, more efficient use of coal in the refinement process.
21. Support the continued use of coal energy.
22. Support the development and improvement of current and future infrastructure for the transmission of coal powered energy.
23. Support and encourage research and development of other uses for coal beyond energy.
24. Energy generated from coal should be transmitted and stored in ways that limit risks to the environment and residents of the County.
25. The County should be involved as a cooperating agency as early as possible in Federal agency action intended to downsize the coal industry in the County.
26. Federal agencies should make the County aware of decisions or actions that could limit, impede, or increase the cost of coal energy brought into the County and allow the County to participate as a cooperating agency early in the process for all such decisions.
27. Encourage proper mitigation of closed mines throughout the County using existing ecological sites to help determine mitigation methods of the area.
28. The County does not support Superfund sites (overview of Superfund can be found [here](#)).

3.4 ENERGY RESOURCES

Oil and Gas

History, Custom, and Culture

Oil and gas production have contributed to Johnson County's taxable income for over 100 years. In the late 1880s oil exploration began in the Salt Creek Basin. Gas production started in the Billy Creek Field, southwest of Buffalo, in 1923, in the Sussex Field in 1948, and two years later in the Meadow Creek Field. The West Sussex Field followed in 1952. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)

In the past 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. Conversely, overall natural gas production has declined. The County has seen gradually decreasing trends in overall oil production over the past 35 years. Prior to 2000, gas production fluctuated near one million MCF (million cubic feet); from 2000 to 2009 gas production grew rapidly, peaking at 359 million MCF in 2009. Since its peak gas production has declined, producing only 5.5 million MCF in 2019. (Figure 6) (Drilling Edge, 2020) These trends in decline and growth are tied to existing economic conditions at the county, state, and national levels (see Figures 7 and 8).



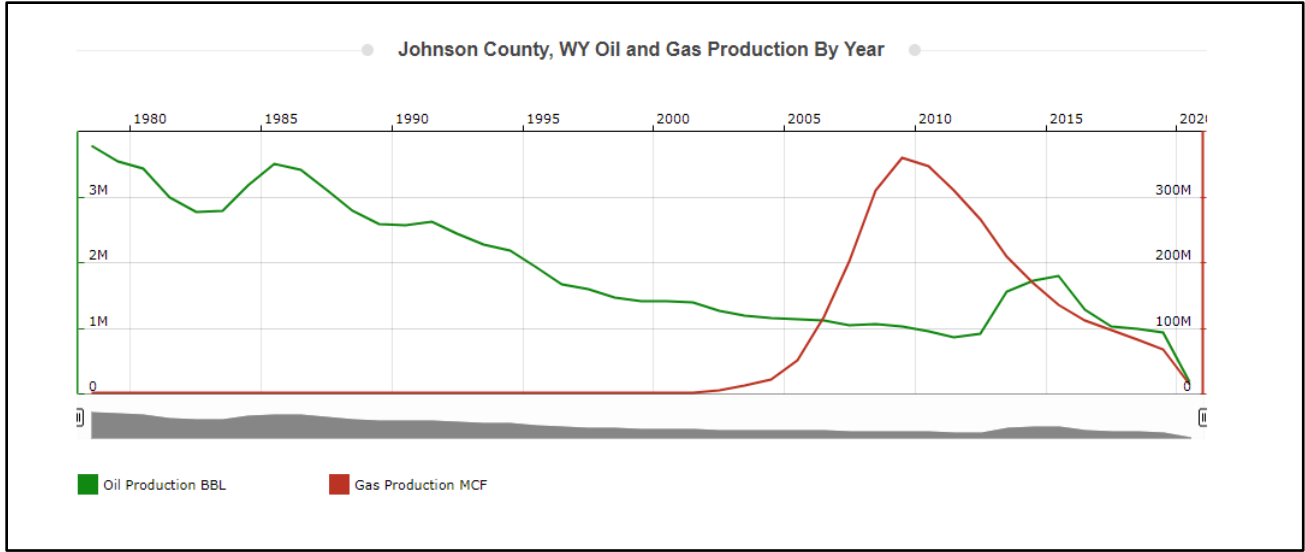


Figure 7. Oil and Gas Production in Johnson County from 1980 to 2020

Wyoming Oil Production for 1978-2018

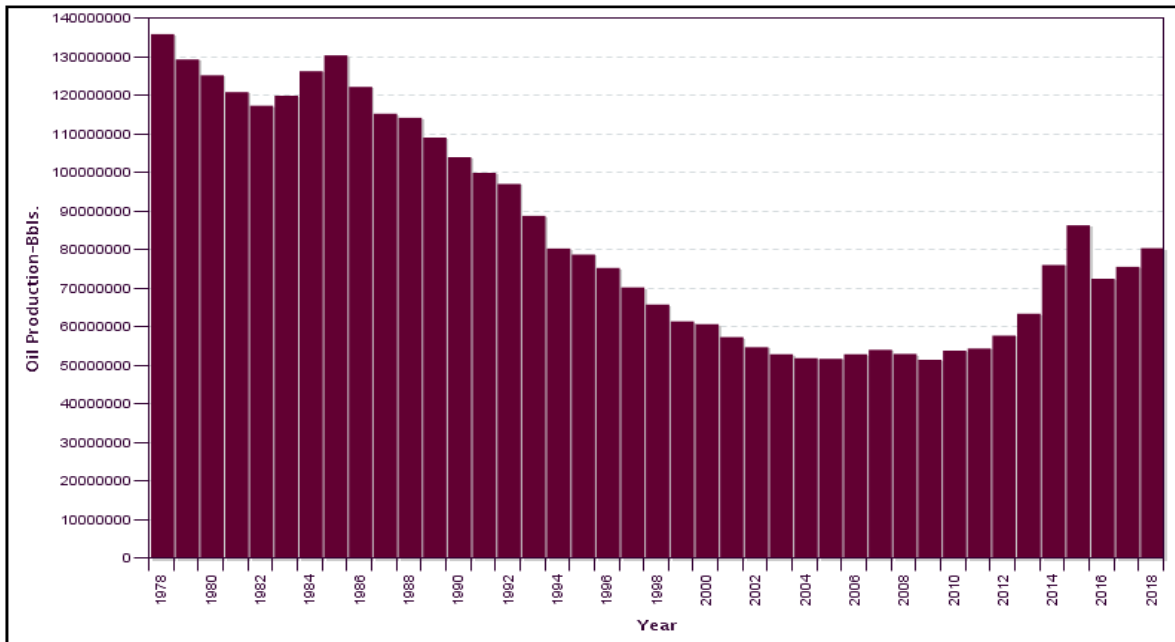


Figure 8: State of Wyoming Oil Production Trends (1978-2018). (WOGCC, n.d.-a)



Wyoming Gas Production for 1978-2018

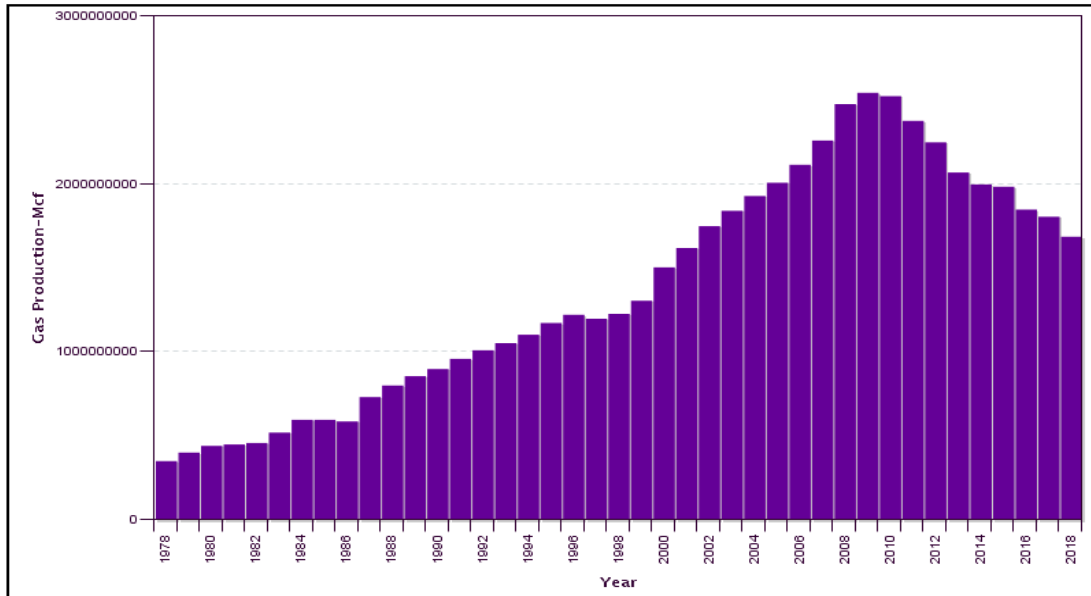


Figure 9: State of Wyoming Gas Production Trends (1978-2018). (WOGCC, n.d.-b)

Horizontal Wells

Horizontal development for oil and gas began in the late 1990's with technology accelerating in the mid-2000's. Currently there are 69 horizontal wells in Johnson County (WOGCC 2020). These wells have produced approximately 6.8 million barrels of oil and 9.3 million cubic feet of gas. Wells within Johnson County are completed in the Sussex Sandstone, Curtis, Mowry Shale, Niobrara Formation, Tensleep Formation, Frontier Formation, and Shannon Sandstone. Horizontal wells are permitted through the Wyoming Oil and Gas Conservation Commission (WOGCC). Wells completed on federal surface or producing from federal minerals also require permitting through the appropriate Federal agency.

Resource Assessment and Legal Framework

The extraction of oil and natural gas 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 the 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, chemical flooding, or horizontal development.

Horizontal development is likely the future of oil and gas in Johnson County. There have been a few extremely productive horizontal developments within the county.



Gas production is similar to 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 similar to 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, and on 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 U.S. 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.

Resource Management Objective:

- A. Oil and gas extraction are managed in a responsible way that promotes the County's economic viability along with the health of ecosystems and citizens of the County.

Priorities:

1. Support streamlining permitting processes for new drilling activities within Johnson County to allow for more exploratory drilling and improved access to reserves.
2. The County is informed of potential uses of county roads and resources from oil and gas activities and the associated impacts to those resources.
3. Pursue opportunities to encourage the nomination of more leases for sale.
4. Prioritize approval of secondary and enhanced (tertiary) 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 for agricultural and domestic use.
5. Encourage implementation of new technology and advanced production techniques to improve access to reserves in place, including long length horizontal wells.
6. Encourage coordination among Federal agencies to facilitate hydrocarbon production permits in a timely manner, as prescribed in federal law.
7. Support the use of enhanced oil recovery and infrastructure (e.g., carbon dioxide pipelines, processing plants, steam flood facilities).
8. Support the utilization of enhanced production techniques and development of infrastructure to provide material supply and support for further development in Johnson County.
9. Encourage Federal agencies to approve oil and gas leases in a timely manner and encourage justification in deferring lease applications.
10. Discourage the disposal of oil and gas produced water into surface waters of Johnson County.



11. The County encourages alternatives to flaring, such as the use of pipelines, etc.

Renewable Energy

History, Custom, and Culture

Johnson County does not have an extensive history or culture associated with renewable energy. However, the renewable energy industry is growing rapidly in Wyoming. The County understands that development of renewable energy is a component of energy infrastructure development. Wyoming currently 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).

Resource Assessment and Legal Framework

There are no wind energy developments within Johnson County, however County does have average annual wind speeds of 7.5-9 miles per second which has opportunity for wind energy development (USGS, 2012).

Solar energy has been implemented on a small scale on private lands within the County with two studies being completed on private lands. There is an opportunity in the future for solar energy development on federal lands.

New development of renewable energy in the County will be considered based on expanding existing available energy infrastructure.

Resource Management Objective:

- A. Development and management of renewable energy occur in a responsible manner that considers the economic viability of Johnson County along with the health, safety, and welfare of the County's citizens and the health and sustainability of the County's natural resources.

Priorities:

1. Coordinate with Johnson County during regulatory processes for renewable energy that may impact the cultural and economic stability of the County.
2. Encourage renewable energy development in coordination with the County and stakeholders.
3. Encourage renewable energy to further develop energy infrastructure and energy independence without encumbering underlying mineral estate.
4. Reclamation is considered prior to project approval.
5. Renewable energy should be given equal priority to other multiple uses in the County.
6. Agencies consider the effects of renewable energy developments on other land uses and potential nuisances, such as noise, blinking lights, and detriments to views, wildlife, and neighboring properties before approving any proposed projects.



Pipelines

History, Custom, and Culture

Due to the development of oil and gas within Johnson County there has been significant development of oil and gas transmission pipelines throughout the County and the Powder River Basin. The development of pipelines in the County began in the early 1920s. The County has long been a proponent of pipeline development. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005; Surdam et al., 2007)

Resource Assessment and Legal Framework

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 Johnson County. Pipelines offer a safe and effective means for delivering large amounts of hydrocarbons across extended distances with some risk for spills (Global Energy Institute, 2013).

Contrary to popular belief, there is little federal regulation of most pipelines. Permitting for interstate natural gas pipelines and interstate liquefied 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 or 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 the field of natural gas regulation was occupied by federal law, but that FERC required the 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 (PHSMA). 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.

Resource Management Objective:

- A. Pipeline development is managed responsibly and takes into consideration the health, safety, and welfare of the County’s citizens and natural resources.

Priorities:

1. Support the development of future and improvement of existing pipeline infrastructure for the transmission of materials in and through Johnson County when it will not affect pre-existing uses or rights.
2. Support the development of pipelines as an alternative to flaring.
3. The County supports streamlined decisions regarding pipelines so long as it does not harm pre-existing uses or rights.
4. Encourage pipeline development to be in the most direct path regardless of land ownership, with a preference to placement on federal lands, except where special designation prohibits or limits surface disturbance.
5. Encourage reclamation of surface disturbance after pipeline construction using weed free native and introduced seed mixes appropriate to the ecological site. Weed mitigation plans for reclamation sites are encouraged.

3.5 AIR QUALITY

History, Custom, and Culture

Clean air in the County is important to citizens and visitors. Wildfires in the summer and fall can create air quality issues. Dust from roads and rangelands can negatively impact air quality, mostly during drought conditions. Clean air is key to people living in this County and to those who visit and wish to live here.

Resource Assessment and Legal Framework

Air quality is important to the health, safety, and welfare of Johnson County’s residents. Under the Clean Air Act of 1970 (42 U.S.C. §7401 et seq.), the U.S. 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 standards. The Clean Air Act requires states to develop a plan to attain 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 WDEQ (R. 08 EPA, 2014). DEQ'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). DEQ 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
- Fuel-burning equipment
- Oil and gas operations
- Manufacturing operations

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

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

The WDEQ Air Quality Division maintains an air quality monitoring location northeast of Kaycee. The monitoring objective of the Johnson County Monitoring Station is to obtain ambient air quality and meteorological data in an oil and gas development area intermingled with rural residential populations. (Wyoming Air Quality Monitoring Network, 2020) The Big Horn National Forest sets the standard to meet state and federal air quality standards, and comply with local, state, and federal air quality regulations and requirements, either through original project design or through mitigation. The Forest's guideline is to minimize effects and impact of smoke for each fire management activity on identified smoke-sensitive areas using "best available control measures" monitoring smoke impacts, and following smoke management requirements established by the WDEQ. (Forest Service: Rocky Mountain Region, 2005) The Buffalo BLM Field Office Resource Management Plan lays out objectives to meet state and federal air quality standards for all projects (BLM, 2015).

Resource Management Objective:

- A. Management of federal lands considers clean air practices and limits air pollution within the County without expansion of rules and policies that would act as an impediment to economic development.

Priorities:

1. Work with Federal, State, and Local agencies to educate stakeholders and develop best management practices (BMP), concepts, and plans to protect air quality in the County.



2. Support the development and implementation of educational programs to provide best management practices on burning to improve air quality when fires occur.
3. Encourage Federal agencies to take aggressive action and implement BMPs for forest management to decrease summer wildfires.
4. Acknowledge that wood burning is a "necessity of life" for the health, safety, and welfare of the County's citizens and should be maintained as an acceptable activity.
5. Ensure there is a balance in which air quality is not compromised at the expense of economic development activities (i.e. mining, oil and gas development) without harming business in Johnson County.
6. Dust mitigation should be required in all development and reclamation plans.
7. The County supports alternatives to flaring to decrease its impact on air quality within the County.

3.6 CLIMATE CHANGE

History, Custom, and Culture

Johnson County relies heavily upon agriculture and energy industries to support the local economy. Climate change including increased temperatures, reduced precipitation, and changes in airflow have the potential to drastically affect the economy of Johnson County. Johnson County is committed to preserving the health of its citizens and its economy and, as such, requires cooperation and open communication with Federal agencies when assessing the effects of proposed federal actions and climate change analysis policies within Johnson County.

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, sediment cores, etc., 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 temperatures.

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:

- The extent to which the proposed action and all reasonable alternative(s) contribute to climate change through GHG emissions.



- The effect of a changing climate over the life of a project on the proposed project including flooding considerations and changes in precipitation; and
- Implications of climate change on the proposed project including cumulative impacts to resource availability (Exec. Order No. 13783, 3 C.F.R., 2017).

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).

Council on Environmental Quality (CEQ) recognizes that land management practices such as prescribed burning, timber stand improvements, fuel load reductions, can result in both carbon emissions and carbon sequestration.

Resource Management Objective:

- A. 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.

Priorities:

1. Coordinate with the County when discussing the climate effects of proposed actions within Johnson County.
2. Support climate change analysis conducted on a regional level rather than a national or global level. The region should be identified through consultation and coordination with Johnson County.
3. Require a full analysis of the impact each “decision” or federal action will have on the local economy. If it is determined that the decision will have significant negative impact on the local economy, the Federal agency should work with the County to develop an alternative solution.
4. Regulation of greenhouse gases through climate change analysis is not supported.



CHAPTER 4: WATER RESOURCES

Overview

Healthy watersheds contain forests 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 recreation opportunities for residents and visitors, serve cultural needs, and provide habitat for native plants, wildlife, and fisheries. The health of Johnson 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. The Buffalo Municipal Watershed Project is a USFS project to clear-cut units to improve forest health and watershed health.

Johnson 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. A successful management strategy for Johnson 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.

Primary watershed areas within the County are the Clear Creek, Crazy Woman, Upper Powder River, and Middle Fork Watersheds. The Clear Creek Watershed is a municipal watershed and surface water source for the City of Buffalo. (Clear Creek Conservation District, 2017)

There are five aquifer systems that feed Johnson County, including the Madison, Dakota, Fox Hills/Lance, Quaternary Alluvial Aquifer System, and Fort Union/Wasatch. The Madison Aquifer System yields up to 400 gpm (gallons per minute) from the Tensleep Sandstone with highly variable quality. The Dakota Aquifer System, located in the Muddy Sandstone and the Cloverly Formation, is primarily used for domestic and livestock water. The primary dissolved solid in the aquifer is sodium bicarbonate between 300 and 3,000 mg/L. The Fox Hills/Lance Aquifer is used for livestock and domestic use (Lance Formation), and municipal, domestic, and livestock use (Fox Hills Formation). Both formations yield <15 gpm. The water quality is considered undesirable for domestic use and poor-good for livestock due to iron, manganese, and sulfate levels. Quaternary Alluvial Aquifer is a thin aquifer within alluvium and terrace deposits and is used widely. Yields in this aquifer are from 50 to 300 gpm. The Fort Union/Wasatch Aquifer System is used for domestic and livestock water. The Wasatch Formation is 500 to 2,000 feet thick and the Fort Union Formation is 1,200-3,900 feet thick. The water quality for this aquifer is variable; refer to the LCD Long Range Natural Resource Land Use Plan. (Clear Creek Conservation District, 2017; HKM Engineering Inc. et al., 2002)

Watershed plans relevant to Johnson County include the Upper Big Goose Creek Watershed Management Plan, Helena Tenmile WTP LT2 Watershed Control Plan, Clear Creek and the Powder/Tongue River Basin Plan Final Report.



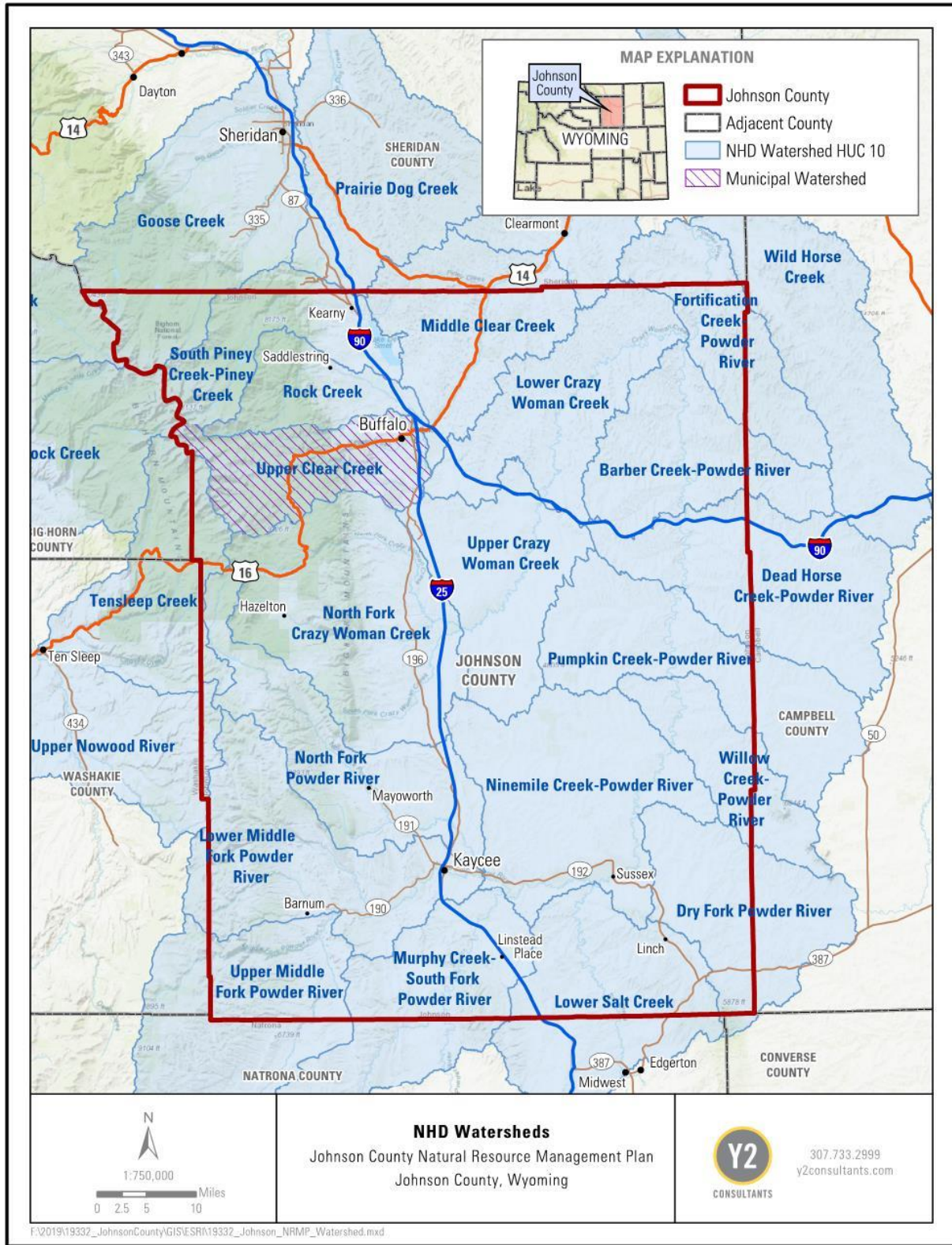


Figure 10. Johnson County Watersheds.



4.1 IRRIGATION AND RELATED INFRASTRUCTURE

History, Custom, and Culture

The primary use of irrigated land in the Powder/Tongue River Basin is for forage production. Many ranchers in the area have depended on irrigated forage production for winter feed since the early development of irrigation in the basin. By the late 1800s bottomland irrigation for forage production was relatively common. In 1972 over 80% of water use in northeast Wyoming was for irrigation. (HKM Engineering Inc. et al., 2002)

In 2002 there were 41,328 acres of full-service irrigated land and 30,002 acres of partial service irrigation (typically receiving reduced water supply) within the Powder/Tongue River Basin. Benefit irrigation acres totaled 169,641. Most irrigation water is sourced from surface waters; less than 0.25% of irrigated lands in the basin use ground water. Within the Powder/Tongue River Basin forage crops dominated active irrigated acres with alfalfa and grass making up 58% and 30% of irrigated crops respectively, while grain and corn production acres totaled 12% combined. (HKM Engineering Inc. et al., 2002)

Additional information on crop production is available in [Section 7.1 Agriculture Production](#).

Resource Assessment and Legal Framework

According to the USGS Water Resources Report, 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. (Plafcan et al., 1993)

Additional information regarding irrigation acres, conveyance, and capacity can be found in the Wyoming Water Development Commission Irrigation Survey System Reports located [here](#)⁶. (Wyoming Water Development Office, 2019).

Resource Management Objective:

- A. Irrigation and water systems are managed, maintained, and improved to ensure current and future access to irrigation water and promote the health, longevity, and sustainability of the County's water.

Priorities:

1. Support the update and improvement of irrigation infrastructure throughout the County to improve overall watershed health.
2. Support the development, improvement, and continued use of irrigation and related infrastructure.



3. Work with appropriate partners and agencies to promote the efficient delivery and use of irrigation water.
4. Support the development of off channel storage facilities that would allow excess spring runoff to be captured and used later in the growing season, with support from surrounding landowners and water users.
5. Encourage and allow consumptive water right owners to improve water quality and water-use efficiency to provide additional water for economic development and agriculture.
6. Support consideration of the effects of irrigation infrastructure while allowing for other multiple uses on federal land.
7. Encourage negotiation of surface use agreements on split estate lands and support siting of oil and gas facilities off irrigated lands, unless otherwise agreed upon by surface user/owner.
8. Support the continued use and protection of historic irrigation ditch rights-of-way through federal lands whether those rights are permanent or require periodic renewal.
9. Any renewal of rights-of-way for irrigation ditches crossing federal lands should be done expeditiously with as little impact to the historical use as is allowed by law.
10. The County does not support the imposition of instream flows as a condition precedent for renewal of historic irrigation ditch rights-of-way.

4.2 DAMS AND RESERVOIRS

History, Custom, and Culture

Dams and reservoirs are located across Johnson County and used for various functions, including storage for irrigation, 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 Dam and Reservoir Division account is available for the development of new reservoirs that are 2,000 acre-feet (AF) or larger, or the enlargement of currently existing reservoirs (minimum of 1,000 AF increased capacity). Funding is also available to Level I and Level II feasibility studies identifying possible water storage projects. (WWDC, n.d.)

Resource Assessment and Legal Framework

The Powder/Tongue River Water Plan evaluated all reservoirs considered 'major reservoirs' within the surface water assessment, as well as 189 other reservoirs that did not meet the 'major reservoir' designation. Major reservoirs are defined as reservoirs with equal to or greater storage capacity than 500 acre-feet. There are fourteen major reservoirs listed in the Powder/Tongue River Basin Water Plan, eleven of which are within Johnson County (Table 3). Several dams associated with these reservoirs are classified as dams with high hazard potential where failure or mis-operation of the dam will likely cause loss of human life. Currently, there are no dams that provide hydroelectricity within the County. The Healy Dam, located on State ground, does have future potential to provide hydroelectricity.



Table 3. Powder/Tongue River Basin Major Reservoirs and Holding Capacities. (HKM Engineering Inc. et al., 2002)

Major Reservoirs in the Powder/Tongue River Basin	Reservoir Capacity (Acre Feet)
Big Goose Park (Park) Reservoir	10,362
Big Horn Reservoir*	4,624
Cross Creek Reservoir	798
Cloud Peak Reservoir*	3,570
Dull Knife Reservoir* (privately owned)	4,345
Healy Reservoir (State owned)	5,140
Kearney Reservoir*	6,324
Lake DeSmet*	234,987
Muddy Guard No. 2 Reservoir	1,934
Tie Hack Reservoir* (municipal watershed)	2,435
Willow Park Reservoir	4,457

*High hazard dam requirements.

Resource Management Objectives:

- A. Quality of dams and reservoirs is preserved, and water resources are developed responsibly to provide well maintained, accessible, and functional dams and reservoirs.

Priorities:

1. Johnson County is consulted regarding federal land management proposals and decisions for their potential impact on water quality, yields, and timing of those yields; impacts on facilities such as dams, reservoirs, delivery systems, or monitoring facilities; and any other water-related concerns.
2. Support the construction of water storage facilities and structures.
3. Support the development of hydroelectricity on dams capable of producing this renewable energy source.
4. Support the proper management, maintenance, and improvements of all dams, especially high hazard dams.
5. Maintain the primary use of all reservoirs within the County for the purpose for which they were originally intended, with the understanding that such use should consider and maintain the highest and best use for citizens within the County and protect current water rights.
6. Support recreational and consumptive use of water to enhance the local economy in a manner that maintains the quality and quantity of the resource.
7. Support the development of small hydroelectric generators in ditch pipes and water pipes on public lands so long as it does not affect pre-existing water rights.

4.3 WATER RIGHTS

History, Custom, and Culture

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



Resource Assessment and Legal Framework

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 (Wyo. Stat. §41-3-101). Wyoming prioritizes water uses as “preferred uses” and all other uses. Wyo. Stat. § 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 use water at all times. 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 in order to have a valid water right. Wyo. Stat. § 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 Wyoming State Engineers Office, so water right users may transfer their water rights for other uses on a temporary basis. Wyo. Stat. § 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)).

A large portion of the groundwater resources in Johnson County have been lost due to domestic use, agricultural use, and natural gas production during the coal bed methane boom in the early 2000s. Though these groundwater resources are renewable in the long-term through snowmelt and surface water seepage, it can take many decades for subsurface aquifers to fully recharge. As groundwater is used in excess of the annual renewal rate the resource is lost for many future generations.

Resource Management Objective:

- A. State water right laws and policies are supported for all waters on public and private lands.



Priorities:

1. Support the preservation and improved management of Johnson County’s groundwater resources.
2. 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.
3. Support recognition of water rights as a private property right that may be owned separately from land.
4. Support the state of Wyoming’s prior appropriation principle for water right allocation.
5. Water rights should not be acquired through exactions, including claims of beneficial use by a Federal agency.
6. The reduction of water districts and senior water right holders’ allocations below historic levels is not supported.
7. Support protection of senior water right holders’ allocations.
8. Support the prohibition of water right exactions for right-of-way and ditch permits. It is the position of the County that in stream flow requirements are exactions.
9. Encourage the protection of water rights in relation to the Yellowstone River Compact and future compacts that may be formed within the County.
10. Johnson County opposes over-reaching federal regulations on Wyoming Waters; we support Wyoming control of Wyoming water.

4.4 WATER QUALITY

History, Custom, and Culture

Water quality is important to the health and quality of life of Johnson County residents. The EPA and WDEQ establish, administer, and monitor standards, policies, rules, and regulations for ground and surface water quality. Johnson County is located in the northeast WDEQ District.

Resource Assessment and Legal Framework

Surface Water Quality

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.” 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 “Water of the United States” 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 Waters of the United States 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 “Waters of the United States” 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). As of the writing of this Plan, the EPA has finalized new CWA regulations that are 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; (2) provide clear exclusions for many water features that traditionally have not been regulated; and (3) defines terms in the regulatory text that have never been defined before. Plainly, under the new CWA regulations, (1) territorial seas and navigable waters, (2) tributaries of jurisdictional waters, (3) lakes ponds and impoundments that contribute surface water flow to a jurisdictional water in a typical year, and (4) wetlands adjacent to non-wetland jurisdictional waters all fall under the jurisdiction of the CWA. *Id.* at 2281.

Wyoming surface water quality standards (Water Quality Rules and Regulations, Chapter 1) are developed with the federal Clean Water Act (CWA) and the Wyoming Environmental Quality Act (WEQA). These standards include water quality criteria, antidegradation provisions, and designated surface water uses (WDEQ, 2018a). The Wyoming Water Quality Assessment Program prepares and submits the Integrated 305(b) and 303(d) *Report to the EPA* biennially to maintain compliance with the CWA (WDEQ, n.d.-e). Policies for antidegradation were last updated in September 2013; Surface Water Quality Standards were last updated in April 2018. Surface Water Quality Standards are reviewed triennially as per the requirements of the CWA (WDEQ, n.d.-d). Surface water designated uses are separated into classes and recreational designated uses. For more information on these classifications refer to the Wyoming Surface Water Classification List and the Recreation Designated Uses Web Map located [here](#)⁷. (WDEQ, n.d.-b, 2013).

The WDEQ’s Wyoming Pollutant Discharge Elimination System (WYPDES) program provides permits that contain limitations and conditions that will assure that the state’s surface water quality standards are protected. Through this program, operators of a point source discharge are required to receive coverage under a WYDPDES discharge permit. (WYDEQ, n.d.)

Groundwater Quality

The Water Quality Division (WQD) Groundwater Program works to protect and preserve Wyoming’s groundwater by permitting facilities to prevent contamination and investigating and cleaning up known releases.

Groundwater Pollution Control Program

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 also assists private landowners with suspected contamination of their wells. The GPC Program also 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

There are several impaired waters within Johnson County, mostly along the Powder River. Table 4 shows the segments listed. The Wyoming 2016/2018 Integrated 305(b) and 303(d) Report includes the Powder River Basin and was completed in 2018. This report includes the 305(b) stream classification/designation list and the 303(d) use and contaminate lists for the Powder River Basin. (WDEQ & WQD, 2018)

Table 4. Lists 303(d) Water Segments within Johnson County. (WDEQ & WQD, 2018)

Waterbody	Location	Miles	Causes for Impairment	List Date	TMDL Date
Powder River	From the confluence with Salt Creek upstream to the confluence with the South Fork Powder River	15.9	Selenium	2000	>2022
Powder River	From the confluence with Salt Creek downstream to the confluence with Soldier Creek	19.3	Chloride	1998	>2022
		19.3	Selenium	2000	>2022
		19.3	Arsenic	2012	>2022
Powder River	From the confluence with Soldier Creek downstream to the confluence with Crazy Woman Creek	100.6	Selenium	2000	>2022
			Arsenic	2012	>2022
Middle Prong Wild Horse Creek	From the confluence with Wild Horse Creek to a point 4.6 miles upstream	4.6	<i>E. Coli</i>	2006	>2022
South Fork Powder River	From the confluence with Cloud Creek to a point 47.2 miles downstream	47.2	Selenium	2006	>2022
Willow Creek	From the confluence with the South Fork Powder River to a point 10.5 miles upstream	10.5	Selenium	2006	>2022
Posey Creek	From the confluence with the South Fork Powder River to a point 8.0 miles upstream	8.0	Selenium	2008	>2022
Murphy Creek	From the confluence with the South Fork Powder River to a point 12.2 miles upstream	12.2	Selenium	2008	>2022



Salt Creek	From the confluence with the Powder River to a point 45.3 miles upstream	45.3	Selenium	2008	>2022
		45.3	Oil Spills	1996	>2022
Crazy Woman Creek	From the confluence with the Powder River to a point 9.2 miles upstream	9.2	Manganese	2002	>2022

Cryptosporidium

Microorganisms such as cryptosporidium, giardia, and e. coli maybe present in municipal water sources. Treatment for these microorganisms can be difficult, especially cryptosporidium. Annually, an estimated 748,000 cryptosporidium cases occur in the U.S. Cryptosporidium protozoa are most commonly spread through fecally contaminated water and can be spread from livestock and wildlife to people. This parasite is tracked by 50 different State agencies using the Center for Disease Control (CDC) National Notifiable Diseases Surveillance System (NNDSS).

There are two watershed plans aimed toward the identification and management of cryptosporidium sources within the Johnson County area. Those plans are the Upper Big Goose Creek Watershed Management Plan, centered just north of the County, and the Helena Tenmile WTP LT2 Watershed Control Plan. (City of Helena, 2011; Painter et al., 2015; VELA Environmental & City of Sheridan, 2015)

Subdivision Review

The WQD Water & Wastewater Program (W&WP) works to ensure safe and adequate supplies of drinking water and the proper disposal of wastewater. Subdivision reviews are governed by Water Quality Rules and Regulations, Chapter 23, and Wyoming Statutes 18-5-301 to 315. The DEQ reviews subdivisions within Johnson County.(WDEQ, n.d.-c)

Resource Management Objectives:

- A. Water quality within the County is maintained or improved for current and/or future uses using legally obtained credible data.

Priorities:

1. The County reserves the right to refer subdivision water quality reviews to the DEQ in special circumstances.
2. Prioritize locally led efforts to monitor and improve water quality, and where feasible, complete in conjunction with existing State and Federal agencies with the same mandate.
3. Require baseline water quality sampling and cataloguing of collected data for wells (including injection wells) on federal lands.
4. Consult Johnson County regarding federal land management decisions for their potential impact on water quality, yields and timing of those yields; impacts on facilities such as dams, reservoirs, delivery systems, or monitoring facilities; and any other water-related proposal.
5. All water quality data considered by agencies should be credible data as is specified in agency handbooks.



6. The County supports the Data Trespass Act (W.S. 6-3-303) and data collected via trespass should not be considered by agencies.
7. Any action, or lack of action, or permitted use that results in a significant or long-term decrease in water quality or quantity is not supported.
8. Support implementation of land management actions and practices that contribute to or maintain healthy drainages and watersheds.
9. Encourage good management and maintenance of watersheds to retain and slowly release water for desired plant, animal, and human uses, and to reduce the risk of flash floods.
10. Encourage coordination with the USFS, BLM, BOR, EPA, DEQ, and other relevant public agencies to ensure that management of watersheds, including municipal watersheds, meets the multiple needs of residents and promotes healthy forests and rangelands.
11. Support reclamation activities on mined lands that improve soil productivity and water quality and the function of streams channels, floodplains, and wetlands for better productivity.
12. Support construction and management of roads, bridges, culverts, cut slopes, fill slopes, and artificial surfaces to minimize water concentration, erosion, and delivery of polluted water and sediment to streams.
13. Implement land use improvements and practices that promote healthy drainages and watersheds.
14. Expect Federal agencies to implement already established state BMPs in coordination with the County and other local governments to mitigate water pollution caused by heavy erosion and sedimentation from public lands under their management, and work with the County, local conservation districts, and other local governments in accomplishing these BMPs. Those BMPs can be found [here](#)⁸.
15. Encourage and allow consumptive water right owners to improve water quality and water-use efficiency to provide additional water for economic development and agriculture.
16. Support policies to improve groundwater health for consumptive use.
17. Ensure recovery plans, habitat management plans, critical habitat designations or other plans proposing an “in stream flow” requirement adequately considers local existing and anticipated future water uses, local custom and culture, local economic and individual needs and is consistent with Wyoming water laws.

4.5 FLOOD PLAINS

History, Custom, and Culture

Federal Emergency Management Agency’s (FEMA)

At the time this document was written, Johnson County was participating in the National Flood Insurance Program (NFIP) (FEMA, 2020). 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). There are currently active Risk MAP projects within Johnson County (FEMA, n.d.-c). For more information on flood hazard mapping within Johnson County refer to FEMA's National Flood Hazard Layer (NFHL) viewer, accessible [here](#)⁹. (FEMA, n.d.-b).

Resource Assessment and Legal Framework

Flood and floodplain management are important to the safety, economy, and ecological health of Johnson County. Flooding is a significant natural hazard within the state of Wyoming and can cause significant damage. From 1905 to present there have been approximately \$126.7 million in damages across the state from flood damage (University of Wyoming, n.d.). Between 1960 and 2015 Johnson County experienced 21 flood events which incurred \$267,000 in crop damage and \$2,176,472 in property damage. Johnson County is categorized as 'High Risk' for flooding in the Wyoming State Mitigation Plan (Wyoming Office of Homeland Security, n.d.). All of Johnson County lies within Zone X, indicating that the area has a low to moderate flood hazard, usually between the limits of the 100-year and 500-year floods.

Resource Management Objective:

- A. Storm water is managed to ensure the health, safety, and welfare of all residents within the County.

Priorities:

1. Support projects and encourage policies which manage storm water, run-off, and flooding on public lands.
2. The County is consulted where flooding and storm water run-off could impact the County.
3. Encourage development of oil and gas facilities outside of the flood plains.

4.6 RIVERS AND STREAMS

History, Custom, and Culture

Rivers and streams are important surface water resources for Johnson County. The County's surface water quality 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 Johnson County. (HKM Engineering Inc. et al., 2002)

Resource Assessment and Legal Framework

The Powder River, and associated waterways, is the main river network in Johnson County. The Powder River is approximately 375 miles long and flows from south to north through the eastern quarter of the County before eventually ending up in Montana and the Yellowstone River. There are three forks to Powder River, the North and Middle Fork flow along the east slope of the



Bighorn Mountains while the South Fork flows on the southern slopes of the Bighorn Mountains west of Casper. The three forks meet in the foothills east of the Bighorn Mountains near Kaycee. The Middle Fork of Powder River was classified as a Special Recreation Management Area (SRMA) in the 2015 BLM RMP. Powder River and the associated stream network is important to agriculture and crop production in the eastern two-thirds of the County as precipitation is significantly lower than along the western border. (HKM Engineering Inc. et al., 2002; National Wild and Scenic Rivers System, n.d.)

Powder River is part of the Yellowstone River Compact. The Yellowstone River Compact divides waters of the tributaries of the Yellowstone River (Clarks Fork, Big Horn, Tongue, and Powder) among the States of Wyoming, Montana, and North Dakota. The compact was negotiated in 1950 and includes the following provisions:

- Existing rights as of January 1, 1950 maintain their status quo.
- Existing and future domestic and stock water uses, including stock water reservoirs up to a capacity of 20 acre-feet, are exempted from provisions of the Compact.
- Devices and facilities for the control and regulation of surface water are exempted from the provisions of the Compact. (USGS, n.d.)

The unappropriated or unused total divertible flow of the Powder River, after needs for supplemental supply for existing rights are met, is allocated 42% to Wyoming and 58% to Montana. (USGS, n.d.)

There are many streams within the County that are important water resources. A list of streams within Johnson County can be found [here](#)²⁴.

Resource Management Objective:

- A. Rivers and streams are managed to maintain water quality, proper ecologic function needs, municipal use to control flooding, and for recreational and industrial use including irrigation.

Priorities:

1. Support management of rivers and streams to meet “in-stream” flow requirements.
2. Any new or changed priorities regarding in-stream flows should be coordinated with the County.
3. Support continued use of rivers and streams by all users.
4. The County is consulted when impacts 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 the County.
6. The County does not support new interstate water diversions, transfers, or obligations outside of those originally agreed to in the Court Decree of the Yellowstone River Compact.
7. Support the recreational and consumptive use of water to support the local economy.



4.7 WETLANDS AND RIPARIAN AREAS

History, Custom, and Culture

Riparian and wetland areas only make up 4% of the state, however they support over 80% of Wyoming's wildlife (Bureau of Land Management, 2016c). These areas are very important to the health and quality of watersheds and their ecological function. Riparian areas are characterized by vegetation that is adapted to the wetter environments along bodies of water. These areas provide a buffer between open water and upland sites, protecting stream banks from erosion, maintaining stream channel morphology and water table access, filtering runoff sediment and nutrients, and improving stream habitat through lowering stream temperatures and increasing oxygen levels. Wetland areas filter sediment and nutrients that improve water quality and play an important role in maintaining habitat. Riparian and wetland areas play large roles in a stream's ability to release energy from floods onto surrounding floodplain areas, greatly reducing flood damage downstream. (WDEQ, n.d.-f)

Resource Assessment and Legal Framework

Riparian and wetland areas are an integral part of the health and resilience of water resources within Johnson County.

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.-f; WGFD, n.d.-c) There are also multiple processes that if done correctly can have a positive impact on wetlands. Livestock grazing managed properly and in the right time of year can provide benefits to wetland areas by thinning vegetation to allow new growth and could be used as a weed treatment option (Clary et al., 1989; NRCS et al., 2006).

The Association of State Wetland Managers maintain resources regarding voluntary wetland restoration work, wetland programs, and law and policy. Federally, some wetlands are considered "Waters of the United States" 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 SWWANCC and 2008 Rapanos (ASWM, n.d.-a, n.d.-b). As of the writing of this plan, the EPA and Army Corps of Engineers recently published new CWA regulations 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.

Bureau of Land Management

The BLM is 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 Proper Functioning Condition with upward or downward trend within a PFC assessment. (Bureau of Land Management, 2016d)



Forest Service

Riparian and wetland management standards for the Forest Service are outlined in the Bighorn National Forest Land and Resource Management Plan (BHNF LRMP). Actions within riparian areas or water influence zones (WIZ) must maintain or improve the long-term health and condition of the stream and riparian ecosystem. The BHNF LRMP also defines WIZs and appropriate methods for improvement projects. (BHNF, 2013)

Resource Management Objective:

- A. Wetlands and riparian areas are managed to be healthy and function properly.

Priorities:

1. Support the management, maintenance, protection, and restoration of wetland and riparian areas to proper functioning condition.
2. Support the use of responsible and appropriate grazing and vegetation management tools to maintain and/or improve wetlands and riparian areas.
3. Manage riparian areas damaged by non-native species (i.e. salt cedar and Russian olive) to decrease the impact of these species on the watershed, including water quality and quantity, and to restore the areas to a proper functioning condition.
4. Use appropriate methods and practices to maintain and restore riparian areas to proper functioning condition.
5. Support the use of credible data and scientific standards for wetland designation.
6. The County does not support any CWA jurisdictional wetland designations for wetlands not located immediately adjacent to a navigable water in the County
7. Support the use of Wyoming Forestry Best Management Practices for treatments within wetland and riparian areas.



CHAPTER 5: WILDLIFE AND FISHERIES

Overview

U.S. Fish and Wildlife Service (USFWS)

The 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. There are seven National Wildlife Refuges totaling 86,681 acres in Wyoming, as of the 2018 Annual Lands Report (USFWS, 2018a). There are no Wildlife Refuges, Wetland Management Districts, or Waterfowl Production Areas in Johnson County. (USFWS, 2018a).

Wyoming Game and Fish Department (WGFD)

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 WGFD 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 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 board provides a flexible system of control, propagation, management, protection, and regulation of all wildlife in Wyoming. WGFDs commission is a board of seven citizens where not more than five can be from the same political party. (WGFD, n.d.-b) The WGFDs mission is 'Conserving Wildlife, Serving People'.

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 ESA, or a NEPA decision document (WGFD, 2017b). 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 government on the development and implementation of the strategy; and
- Involving broad public participation.

The species list includes 229 total species including 80 birds, 9 amphibians, 24 reptiles, 51 mammals, 28 fish, 8 crustaceans, and 29 mollusks, each with a specific priority designation based on the essential elements listed above. (WGFD, 2017b)

Wyoming’s List of Species of Greatest Conservation Need 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 WGFD 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
- 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.-c; WGFD, 2017b)

The WGFD updates the species on the Conservation Priority List in conjunction with the State Wildlife Action Plan. The current list of species at the writing of this plan is provided in Table 5 (pg. 132), Table 6 (pg. 133), and Table 7 (pg. 137) in the appendices. The Wyoming Species of Conservation Priority List can also be found on the [WGFD website¹⁰](#). (WGFD, 2017a).



5.1 THREATENED AND ENDANGERED SPECIES

History, Custom, and Culture

Endangered Species Act (ESA)

Protection of endangered species at the federal level began with the enactment of 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 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.

The USFWS and the National Marine Fisheries Service (NMFS) administers and enforces the modern ESA. The Service has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. (USFWS, n.d.-a) NMFS does not oversee any species within Wyoming.

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 be areas that qualify as “habitat.” *Weyerhaeuser Co. v. US Fish and Wildlife Service*, 139 S. Ct. 361, 368 (2018). Neither the ESA nor USFWS regulations currently define “habitat.” Id. 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.

- 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.
- Candidate Conservation Agreements (CCA) and CCAs with Assurances (CCAA) (private landowner arrangements for the protection of Candidate species that provides 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 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)

Resource Assessment and Legal Framework

Candidate, Threatened, and Endangered Species in Johnson County

Currently listed threatened and endangered species can be found on the USFWS [Environmental Conservation Online System](#)¹¹ (ECOS). (U.S. Fish and Wildlife Service, n.d.). At the writing of this report there are four endangered, threatened, candidate, and proposed species and habitats that have been identified for Johnson County. Those species are:



- Canada lynx (*Lynx canadensis*)- Threatened
- Grizzly bear (*Ursus arctos horribilis*)- Threatened
- Ute ladies' tresses (*Spiranthes diluvialis*)- Threatened
- Wolverine (*Gulo gulo luscus*) – Proposed as threatened

Resource Management Objective:

- A. Threatened and endangered species are managed using credible data and in conjunction with multiple use mandates in coordination with the County and other stakeholders.

Priorities:

1. Support delisting of any species with insufficient, unsupported, or questionable data not meeting the minimum criteria for its listing or protection level.
2. Critical habitat should be only those areas where the listed species could currently survive and should not include areas that are missing an essential feature for the survival of the species or would require some degree of modification to support a sustainable population of the species.
3. Upon conducting a robust and full local economic analysis of proposed critical habitat designations in the County, if the analysis indicates economic harm to the County and its citizens outweighs the benefit of the critical habitat to the listed species, the USFWS should immediately exclude such habitat from critical habitat designation.
4. Support participation of the County and other local governments as a cooperating agency and/or in coordination in federal rulemaking, including any NEPA analysis related to the designation of critical habitat, economic analysis for exclusion of critical habitat, and development of recovery plans.
5. Do not support the introduction or reintroduction of listed species into Johnson County, unless the County consents to terms and conditions or standard operating criteria that avoid disrupting current land uses.
 - a. Should an agreement not be reached on the potential introduction or reintroduction, and the species is introduced anyway, support the species being introduced only as a non-essential or experimental population.
6. Support participation of the County and other local governments as cooperating agencies in all decisions and proposed actions which affect the County regarding sensitive, threatened, or endangered species; critical habitat designation and exclusion; the reintroduction or introduction of listed species; habitat conservation plans; conservation agreements or plans; and candidate conservation agreements.
7. Support the development of recovery plans within 18 months of listing that include clear recovery objectives for delisting; for species already listed support the development of a recovery plan within 18 months of this document.
8. Support the petition of the immediate delisting of a species when population or recovery plan objectives have been met, in accordance with the ESA.
9. Support the development and implementation of local solutions (e.g., habitat management plans, conservation plans, or conservation plans with assurances) on federal lands to keep a species from being listed under ESA or as species of concern/species of



special concern so long as such management considers multiple uses already established within the area.

10. Single-species management should be avoided in all federal planning efforts. Multiple uses and sustained yield of lands and resources is supported and implemented as required by federal law.
11. Data used in listing decisions should meet the minimum criteria defined in Data Administration and Management (Bureau of Land Management, 2006) and Forest Service Handbooks FSH 1909.12, (United States Forest Service, 2013) Supporting Land Management Planning.
12. Support control of predators negatively impacting special status, candidate, or listed species before restricting other multiple uses that could be conflicting.
13. Support proven and efficient control of zoonotic and vector borne diseases negatively impacting special status, candidate, or listed species before restricting other multiple uses that could be seen as conflicting.
14. Management or voluntary actions which increase the population of listed species in the County without an approved recovery plan is not supported. Without a recovery plan, management focused on increasing the species population or habitat and cannot move that species closer to a potential delisting.
15. Support the continued use of existing valid permits and lease rights on lands with listed species wherever possible.
16. At a minimum, copies of legal descriptions showing the exact boundaries of designated critical habitat should be provided to local governments in Johnson County.
17. The designation of potential habitat as critical habitat is not supported unless quantifiable data showing when and how features necessary for species recovery will be achieved on the property.
18. An exclusion analysis should be completed for all lands within Johnson County.

5.2 GENERAL WILDLIFE AND SENSITIVE SPECIES

History, Custom, and Culture



Johnson County has diversity habitat that hosts several large wildlife species that are important to the recreational industry of the region. Virtually all the County is habitat of some importance. Johnson County's big and trophy game species include black bear (*Ursus americanus*), elk (*Cervus canadensis*), moose (*Alces alces*), mountain lion (*Puma concolor*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), and white-tailed deer (*Odocoileus virginianus*). Refer to the 2005 Johnson County Comprehensive Land Use Plan (JCCLUP) for additional

information regarding wildlife habitat and resources in the County (Johnson County



Commissioners & Johnson County Planning and Zoning Commission, 2005). Refer to Figure 11 through Figure 16 for pronghorn, mule deer, elk, moose, sage-grouse and white-tail deer seasonal ranges within Johnson County.

The hunt units for pronghorn within Johnson County include Areas 10, 16, 20, 21, 22, 102, and 113. The hunt areas for mule deer and white-tailed deer include Areas 26, 27, 28, 29, 30, 31, 32, 33, and 163. The hunt areas for elk include Areas 33, 34, 35, and 36. The hunt area for moose is Area 34.

See the [Overview](#) section for this chapter for additional information on the history, custom, and culture of wildlife in the County.

Resource Assessment

Wildlife Refuges in Johnson County

In 1903, President Theodore Roosevelt designated the first National Wildlife Refuge by Executive Order. It was not until 1966 that the refuges were put into the NWR and administered by the USFWS. The USFWS administers 89.1 million acres of federal land in the U.S., 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 U.S. 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 seven National Wildlife Refuges in Wyoming (USFWS, n.d.-b), however none are within Johnson County.

Wildlife Habitat Management Areas (WHMA)

The WGFD maintains approximately 450,000 acres of land under deed, lease, or by agreement for wildlife habitat management areas (WHMA) in Wyoming.

There are two WHMAs within Johnson County, the Ed O. Taylor WHMA and the Bud Love WHMA. A map of these WHMAs can be found [here¹²](#). Both areas provide public opportunities for fishing, hunting, camping and hiking. (WGFD, 2020a)

State of Wyoming Migration Corridor Protections

In February 2020 Wyoming released the [Wyoming Mule Deer and Antelope Migration Corridor Protection Executive Order 2020-1¹³](#), 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 antelope migration corridors, as well as the cooperation between WYDOT and WGFD (and other related State agencies) to minimize roadway collisions and facilitate big game movement across roadways. (State of Wyoming, 2020)



Executive Order 2020-1 promotes Counties to revise or update land use plans to be consistent with the state designated migration corridor protections. There are currently no migration corridors designated within Johnson County. (WFGD, 2020)

Chronic Wasting Disease (CWD)

Chronic Wasting Disease (CWD) has been a concern for ungulate populations in Johnson 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 WGFDD 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; WGFDD, 2020b)

For additional information on the monitoring and management of CWD in Wyoming refer to the [Wyoming Chronic Wasting Disease Management Plan](#)¹⁴.

Greater Sage-Grouse

There are approximately 569,362 acres of designated core habitat for sage-grouse within Johnson County (Figure 16).

Greater sage-grouse is a state-managed species that is dependent on sagebrush steppe ecosystems. These ecosystems are managed in partnership across the range of the Greater sage-grouse 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 Greater sage-grouse and its habitats. BLM has broad responsibilities to manage federal lands and resources for the public benefit. Nearly half of Greater sage-grouse habitat is managed by the BLM.

In September 2015, the USFWS determined that the Greater sage-grouse 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 Greater sage-grouse 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 BLM issued its Record of Decision for the Wyoming Greater Sage-Grouse Approved Resource Management Plan Amendment (ARMPA) in March 2019 to update Greater sage-grouse management. This document partially supersedes the 2015 Final Bighorn Resource Management Plan revisions. The 2019 Plan Amendment is currently being litigated in the United States District Court for the District of Idaho and is blocked from implementation under an injunction issued by that court.



In 2019, the Wyoming Governor’s Office issued [Sage-Grouse Executive Order 2019-3](#)¹⁵. The Executive Order is the State of Wyoming’s primary regulatory mechanism 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.

Bureau of Land Management (BLM)

Special Status Species are designated by the BLM and include 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 particular 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;
- A federal 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 are included in Table 8 (pg. 139) in the appendices.

U.S. Forest Service (USFS)

Regulations in 36 C.F.R. § 219.19 and § 219.20 call for the selection, evaluation, and monitoring of focal species and their habitat. Focal species may be “plant or animal species and are selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality” (US Forest Service, 1982). These regulations do not imply that the population dynamics of management indicator species directly represent the population dynamics of other species. Criteria that direct focal species consideration include:

- Species is indigenous.
- Species is a year-long resident of the vicinity (non-migratory), or population trends of the species in the local or regional vicinity are closely tied to habitat conditions resulting from land uses on National Forest System (NFS) lands in the same area.
- Species is considered a keystone species or habitat specialist.
- Species is sensitive to management activities on NFS lands in the local or regional vicinity.



- Population trends of the species are assumed to be related to changes in habitat composition, structure, ecological processes, and/or human activities.
- Species is appropriate for the scale that best represents the key issues or management concerns.
- Biologically and economically feasible to monitor populations and habitat of the species at similar spatial scales.
- Populations are of sufficient size or density to be reasonably detected and monitored. Accepted survey protocols exist. Analysis and interpretation of inventory data should produce meaningful and reliable trend information. Species that require high investment for low returns or suspect results should be avoided.
- Species where the scientific literature supports the assumed limiting factors and habitat associations. (USDA Forest Service, 2001)

Bighorn National Forest

Management Indicator Species and Threatened, Endangered, Proposed, Candidate and USFS Region Two Sensitive Species identified on the Bighorn National Forest are included in Table 9 (pg. 141) and Table 10 (pg. 142) in the appendices.

Rocky Mountain Region

The Rocky Mountain Region of the USFS has 173 identified sensitive species. These species are included in Table 11 (pg. 144) and Table 12 (pg. 147) in the appendices.

Resource Management Objective:

- A. Wildlife is managed sustainably using credible data and management plans that are developed in coordination with the County and other stakeholders.

Priorities:

1. Discourage mandatory restrictions for management of wildlife species and habitat beyond that provided through their current legal designation.
2. Support creating a unified (cross-agency) definition for “species of concern.”
3. Support the use of credible data as information BLM and USFS can use as a basis for a decision that a species should be designated a “species of concern” or “sensitive” beyond criteria provided in their respective handbooks.
4. The management of non-ESA listed species (e.g., species of concern, species of special concern, or any other non-ESA designation) as though they are protected by the rules of the Endangered Species Act is not supported.
5. The County supports the State of Wyoming’s Sage-Grouse Conservation Strategy.
6. Management plans should be generated to protect the overall health of all natural resources, using multiple use principles, not specifically managed for one individual species.
7. Encourage and support timely responses from Federal agencies when requested by Johnson County for resources concerns, management plans, and other sensitive, candidate or listed species.



8. Management plans should use independent scientific data, peer-reviewed science, and/or those data meeting the ‘credible data’ agency specifications to generate plans.
9. Minimize management of “special status” species to decrease single-species management efforts, and to eliminate management of special status species as ESA-protected species.
10. The County should be notified of proposed expansions or reductions of Greater sage-grouse core areas and connectivity areas and be provided an opportunity to participate as a cooperating agency on all major federal actions regarding Greater sage-grouse core areas.
11. The County should be consulted and coordinated with in the continued management of Greater sage-grouse, and other species for which a single-species management plan is developed.
12. Create management and population objectives based on the carrying capacity of the habitat including all multiple use mandates (livestock grazing, mineral extraction, etc.) on federal lands.
13. Support habitat monitoring efforts and refine available habitat data.
14. Consultation and coordination occurs with Johnson County where federal monies or resources are committed for the development of management plans, population objectives, wildlife introductions (i.e., big horn sheep or pronghorn), or other decisions that may affect the economic viability of communities within Johnson County, as required by agency mandates.
15. Peer-reviewed science, and/or those data meeting the ‘credible data’ agency specifications, are used in the management of disease spread between native and domestic species, with consultation and coordination of local government.
16. The County requests to be consulted and coordinated with as a cooperating agency as early as possible in the review process of species of concern and sensitive species and in the determination of what should be included as a species of concern or sensitive species.
17. The County should be consulted and coordinated with in the establishment of recovery objectives for species of concern and the development of management actions to move species off the list of concern. Once recovery objectives have been reached, support removing species from the list of concern.
18. Johnson County supports State management of wildlife and management of wildlife on federal lands should reflect Wyoming policy priorities.
19. Support research and management of mule deer, white-tail, and elk for reduction of chronic wasting disease, vehicle collisions, and migrations.
20. Wildlife populations should be managed across federal lands to prevent disease, depredation, and vehicle collisions.



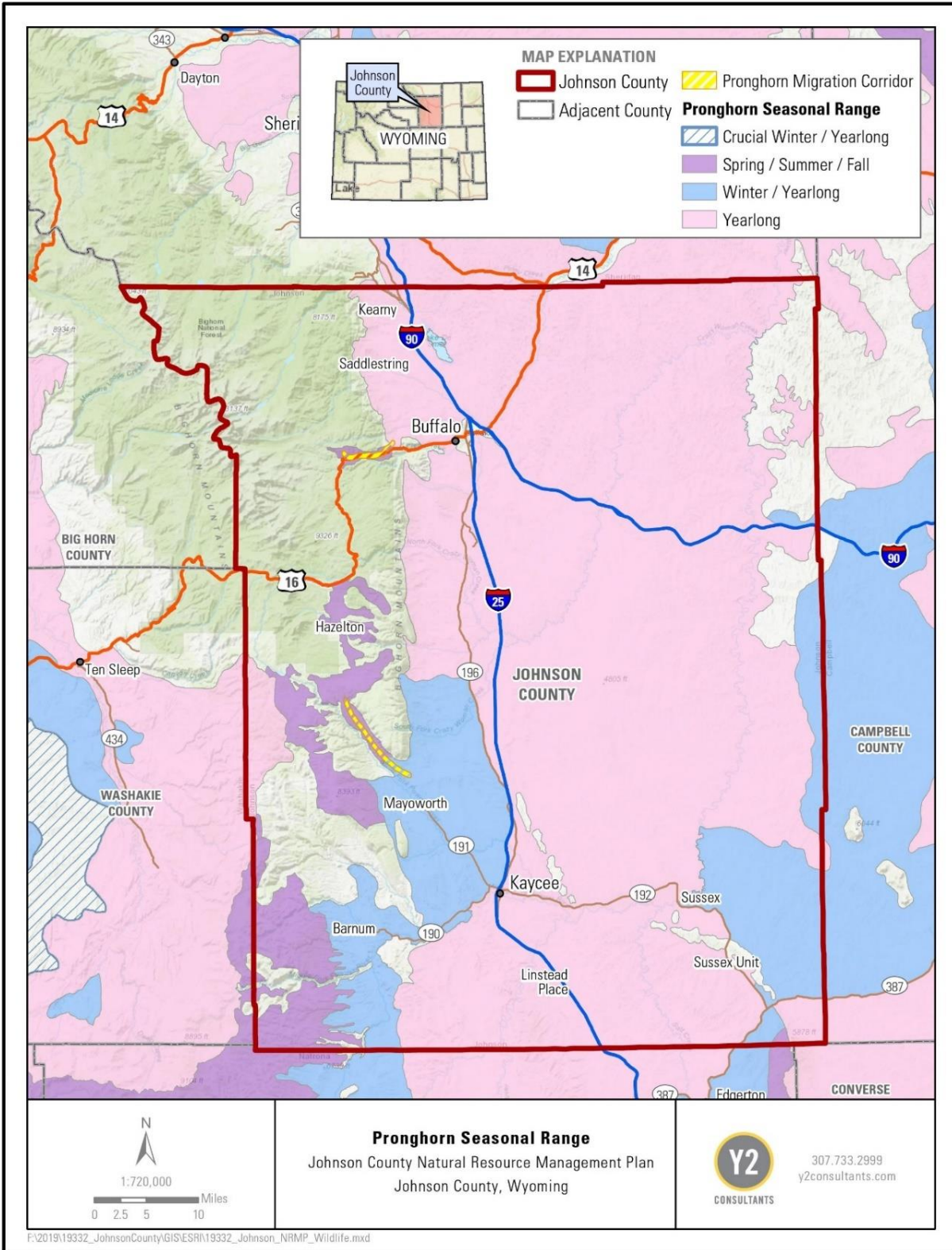


Figure 11. Pronghorn Seasonal Range in Johnson County.



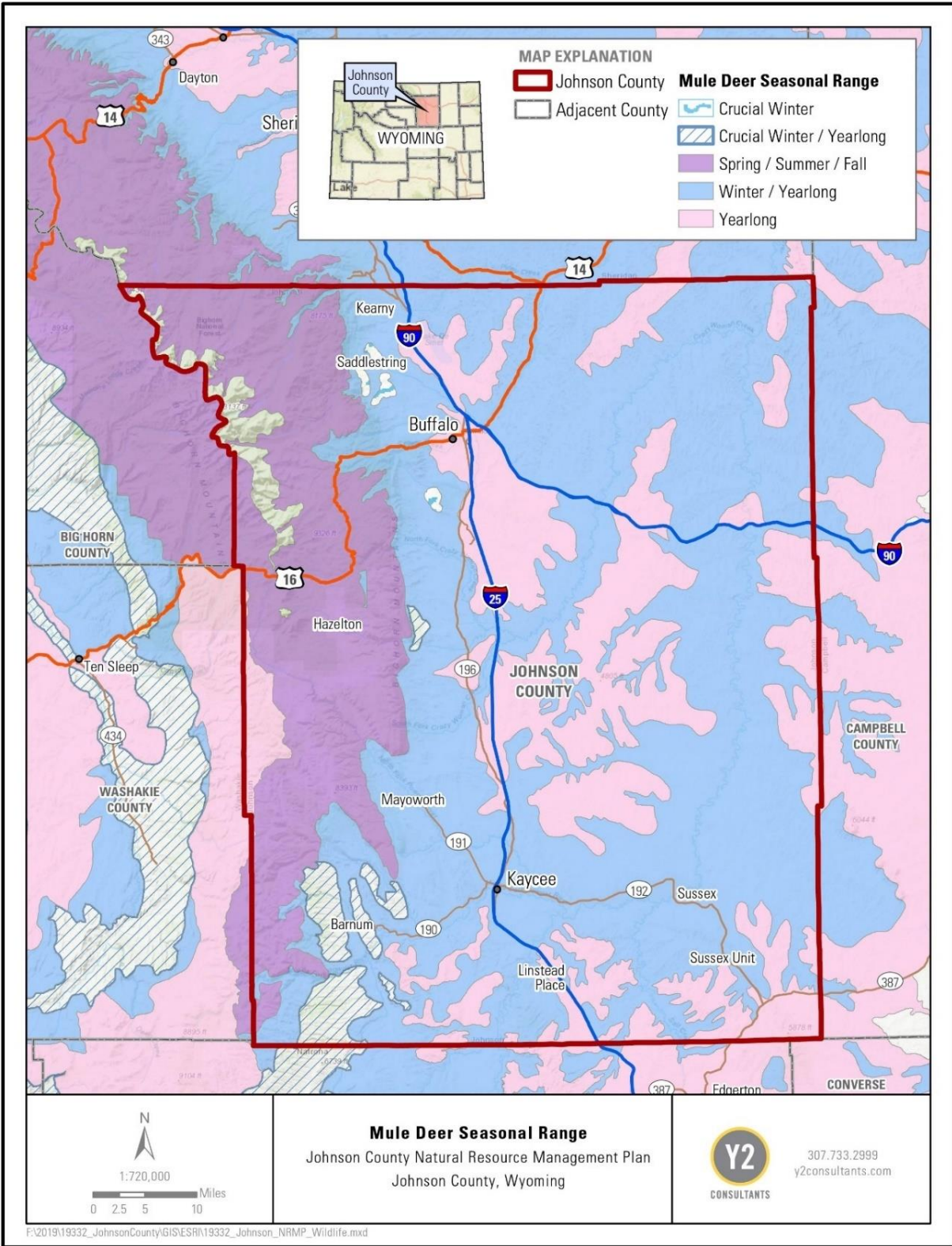


Figure 12. Mule Deer Seasonal Range in Johnson County.



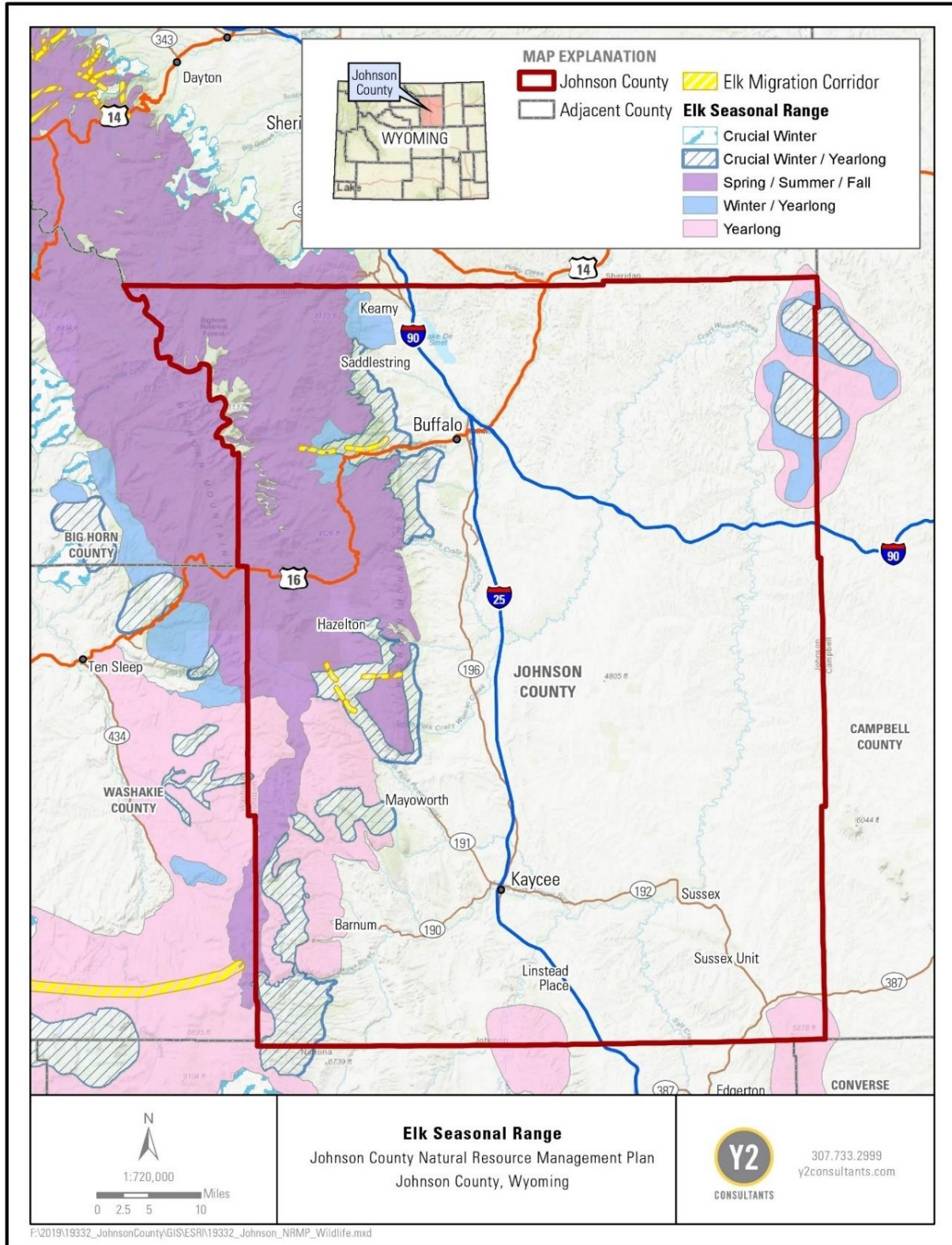


Figure 13. Elk Seasonal Range in Johnson County.



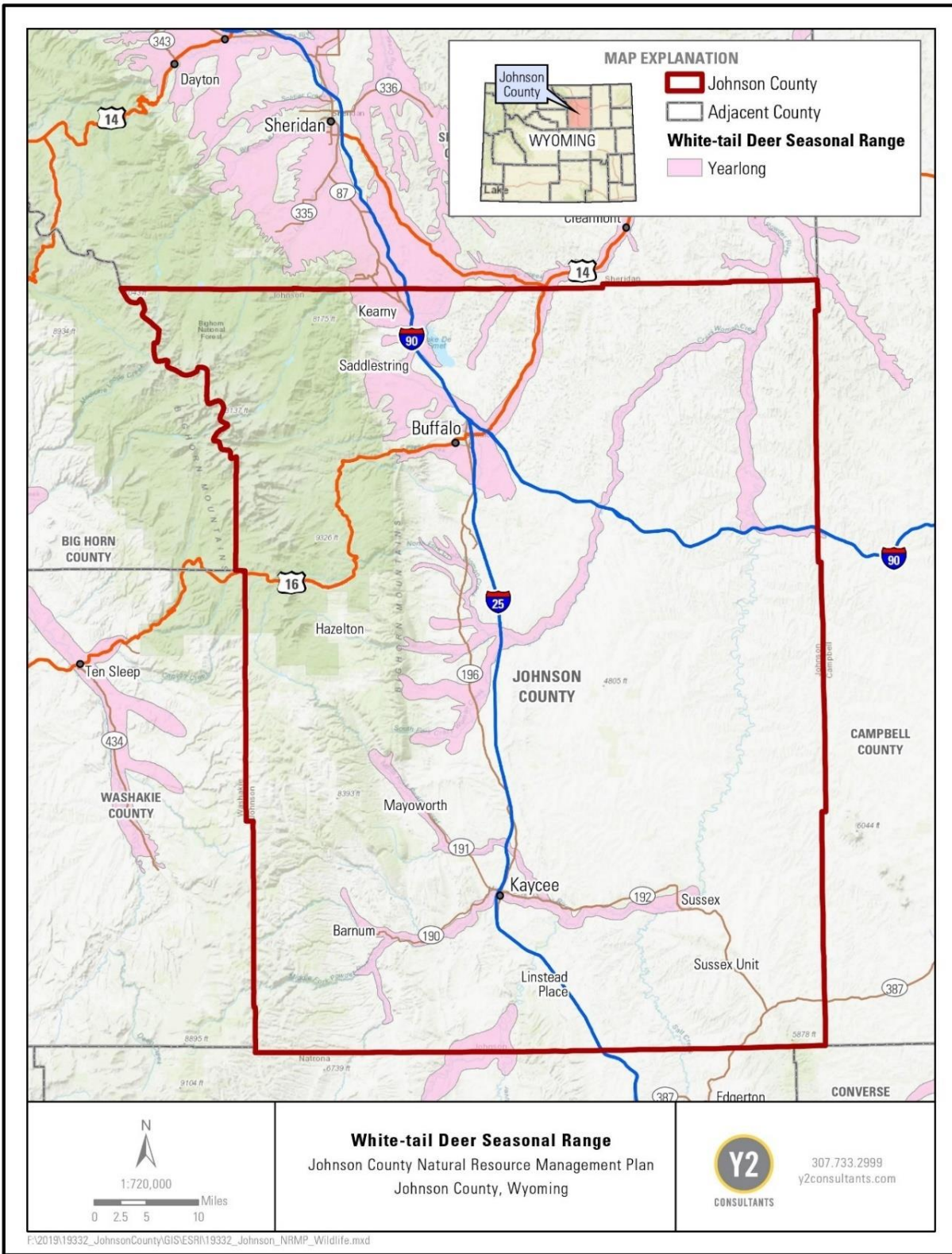


Figure 14. White-tail Deer Seasonal Range in Johnson County.



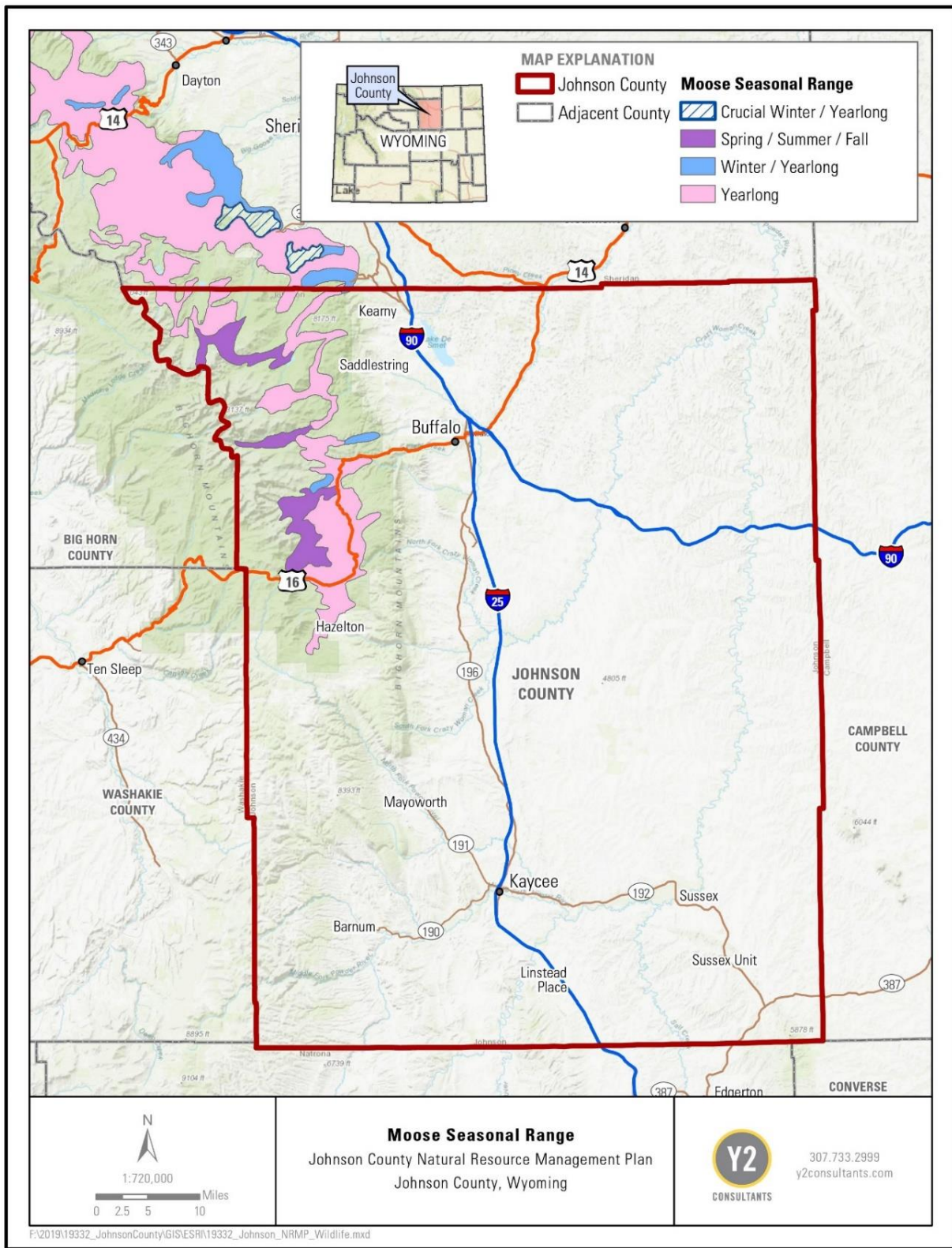


Figure 15. Moose Seasonal Range in Johnson County.



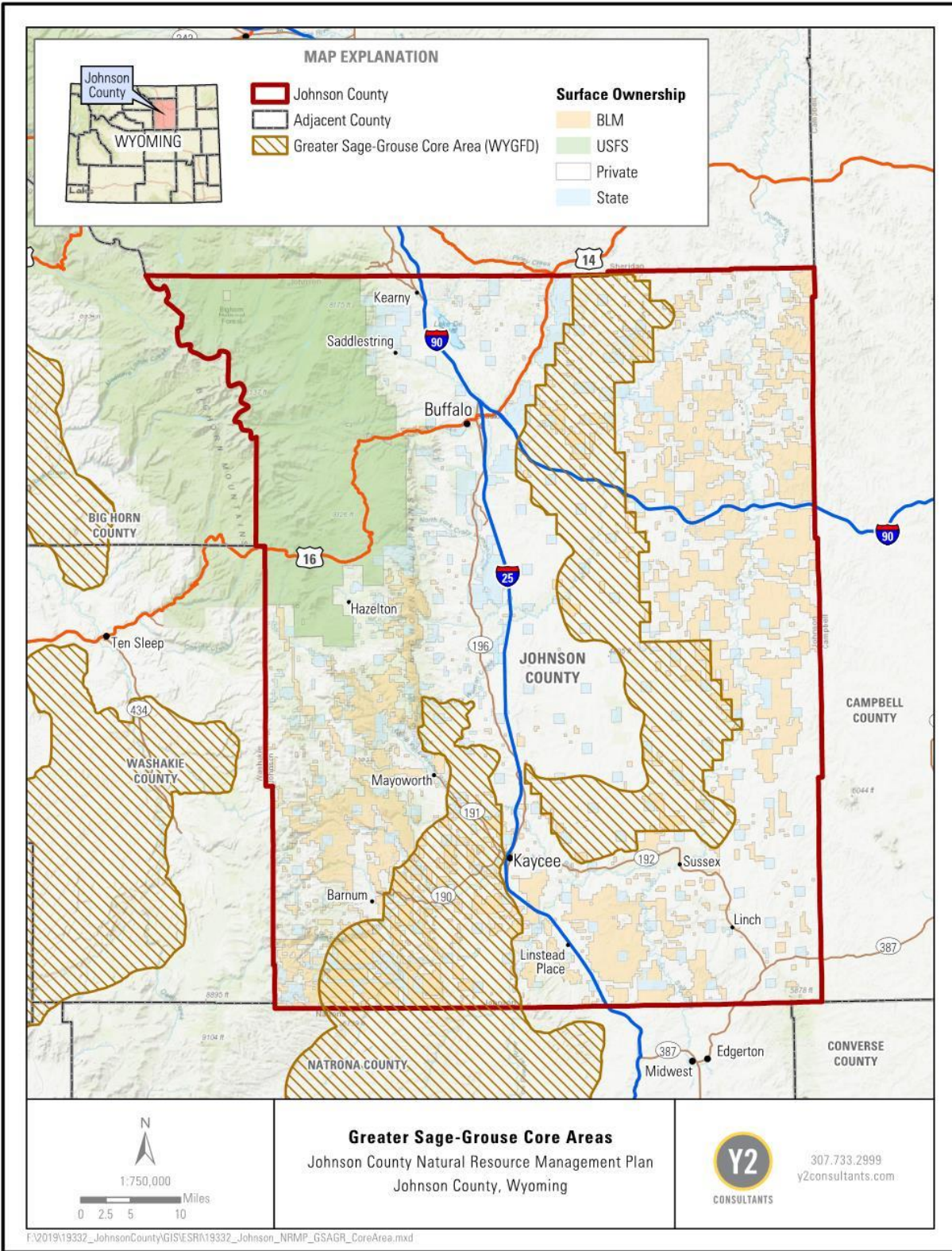


Figure 16. Greater Sage-Grouse Mapped Core Area within Johnson County.



5.3 FISHERIES

History, Custom and Culture

The WGFD manages and monitors fishing activity throughout the state. 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 Johnson County there two blue ribbon stretches: a stretch of the Middle Fork Powder River and a stretch of the North Fork Powder River. There are five stretches that are classified as red ribbon: a stretch of Clear Creek, two stretches of North Fork Powder River, Blue Creek below Sinks, and Buffalo Creek. The remaining streams in the county are classified as yellow ribbon. The WGFD Fish Stream Classifications map can be found [here](#)¹⁶.

WGFD tracked 121,000 angler days annually on streams and 109,000 angler days annually on ponds, lakes, and reservoirs within the Powder/Tongue River Basin in records prior to 2002. More recent estimates indicate that these numbers could be closer to 140,000 stream angler days and 132,000 standing water angler-days. (HKM Engineering Inc. et al., 2002)

Resource Assessment

Fisheries support the recreation and tourism industries in Johnson County. Fishing is one of the largest recreation uses of water resources within the basin (HKM Engineering Inc. et al., 2002). 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. The Powder River Basin is composed of six watersheds, Clear Creek, Crazy Woman, Upper Powder River, Middle Fork of Powder River, Salt Creek, and South Fork of Powder River. These watersheds support a diversity of fisheries. Within the Clear Creek Watershed there are Brown Trout, Rainbow Trout, Cutthroat Trout and Mountain Suckers, the Middle Fork of Powder River has Rainbow Trout, and the Crazy Woman Creek Watershed has Brook Trout, Brown Trout, and Rainbow Trout. Figure 17 lists the native and introduced fisheries present in each watershed. Refer to the JCCLUP for additional fishery information within the County.

The major challenges and limiting factors to supporting sport fisheries within Johnson County are barriers to natural fish migration and inefficient irrigation infrastructure which lead to water shortages during critical periods.



FISH SPECIES WITHIN POWDER RIVER BASIN WATERSHEDS JOHNSON COUNTY							
Fish Species Common Name (Scientific name) (Species: I - Introduced or N- Native)	Wyoming Native Species Status	Watersheds					
		Middle Fork Powder River	Upper Powder River	South Fork Powder River	Salt Creek	Crazy Woman Creek	Clear Creek
Black crappie (<i>Pomoxis nigromaculatus</i>)(I)			X				
Brassy minnow (<i>Hybognathus hankinsoni</i>)(N)	6		X				X
Brook trout (<i>Salvelinus fontinalis</i>)(I)		X					
Brown trout (<i>Salmo trutta</i>)(I)		X	X				
Channel catfish (<i>Ictalurus punctatus</i>)(N)	4		X			X	
Common carp (<i>Cyprinus carpio</i>)(I)			X			X	X
Creek chub (<i>Semotilus atromaculatus</i>)(N)	5		X	X			X
Emerald shiner (<i>Notropis lutrensis</i>)(I)			X				
Fathead minnow (<i>Pimephales promelas</i>)(N)	6		X	X	X	X	X
Flathead chub (<i>Platygobio gracilis</i>)(N)	3	X	X	X	X	X	X
Goldeye (<i>Wiodon alosodies</i>)(N)	2		X			X	X
Lake trout (<i>Salvelinus namaycush</i>)(I)			X				
Longnose dace (<i>Rhinichthys cataractae</i>)(N)	7	X	X	X	X	X	X
Longnose sucker (<i>Catostomus catostomus</i>)(N)	4	X	X			X	X
Mountain sucker (<i>Catostomus platyrhynchus</i>)(N)	3	X	X	X		X	
Northern redbhorse (<i>Maxostoma macrolepidotum</i>)(N)	4		X			X	X
Plains killfish (<i>Fundulus zebrinus</i>)(N)	6		X	X			
Plains minnow (<i>Hybognathus placitus</i>)(N)	3		X	X	X		X
Rainbow trout (<i>Oncorhynchus mykiss</i>)(I)			X				
River carpsucker (<i>Carpionodes carpio</i>)(N)	4		X			X	X
Rock bass (<i>Ambloplites rupestris</i>)(I)			X			X	X
Sand shiner (<i>Notropis stramineus</i>)(N)	7		X	X	X	X	X
Smallmouth bass (<i>Micropterus dolomieu</i>)(I)						X	X
Stonecat (<i>Noturus flavus</i>)(N)	4	X			X	X	X
Sturgeon chub (<i>Macrhybopsis gelida</i>)(N)	1				X		X
White sucker (<i>Catostomus commersoni</i>)(N)	7	X		X	X	X	X

Notes:
(I) Fish specie introduced in Wyoming
(N) Fish specie native to Wyoming
Wyoming Native Specie Definitions:
Status 1 Species – Populations are physically isolated and/or exist at extremely low densities throughout range. Habitats are declining or vulnerable. Extirpation appears possible.
Status 2 Species - Populations are physically isolated and/or exist at extremely low densities throughout range. Habitat conditions appear stable.
Status 3 Species – Populations are widely distributed throughout its native range and appear stable. However, habitats are declining or vulnerable.
Status 4-7 Species – Populations are widely distributed throughout native range and are stable or expanding. Habitats are also stable.

Source: Wyoming Game and Fish Department, 2001; U. S. Bureau of Land Management, 2002.

Figure 17. Johnson County Native and Introduced Fish Species by Watershed. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005)

Resource Management Objectives:

- A. Aquatic resources are managed for healthy and biodiverse fisheries that support recreation and tourism.



Priorities:

1. Support the improvement of irrigation structures to ensure sufficient water flows during critical times for fisheries.
2. Management plans should be generated to protect the overall health of all fisheries resources within an area, not specifically managed for one individual fish species.
3. Management plans will use independent scientific data, peer-reviewed science, and/or those data meeting the 'credible data' agency specifications to generate fisheries plans.
4. Support fisheries habitat monitoring efforts and refine available fisheries habitat data.

5.4 WILD HORSE, BURROS AND ESTRAY LIVESTOCK

History, Custom, and Culture

Wild Horse and Burros

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).

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 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 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.

The BLM designates both Herd Areas (HAs) and Herd Management Areas (HMAs). Herd areas are areas in which “wild” horses and burros were found in 1971 and these are the only areas that BLM may manage horses by law. Herd management areas are the areas selected within each HA 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 GIS. (National Horse & Burro Rangeland Management Coalition, 2015)

Wild horses have been problematic for federal land grazing permittees since the passage of the WFRHBA. 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. HMAs are not fenced, allowing horses to cause degradation on private and state lands.

There are no wild horse areas on USFS lands in Wyoming.

Estray Livestock

"Estray" means any animal found running at large upon public or private lands, fenced or unfenced, in Wyoming whose owner is unknown, whose owner cannot be found, or that is branded with two or more disputed brands for which neither party holds a bill of sale.

Resource Assessment and Legal Framework

Herd Management Areas (HMAs)

There are currently no Herd Management Areas within Johnson County.



Herd Areas (HA)

There are currently no Herd Areas designated within Johnson County.

Estray

An estray includes any animal for which there is no sufficient proof of ownership found upon inspection (W.S. 11-24-101 through 11-24-115). Johnson County manages estray livestock under the Wyoming Statute.

Resource Management Objective:

- A. No Herd Management Areas or Herd Areas will be designated or created in the County.
- B. The County will be notified and coordinated with if there are any intentions to designate or create Herd Management Areas or Herd Areas in the County.

Priorities:

1. The County opposes any proposed creation or designation of HMA or HAs within the County.
2. Coordinate with the County if there are any intentions to designate or create Herd Management Areas or Herd Areas within Johnson County.
3. Any equine animal released from private individuals, tribes, or neighboring lands onto public lands after 1971 should be considered as estray and be removed.



CHAPTER 6: ECONOMICS & SOCIETY

6.1 TOURISM AND RECREATION ON FEDERAL LANDS

History, Custom, and Culture

Tourism and recreation in Johnson County are increasingly contributing to the custom, culture, and economy of the area. People from metropolitan areas are traveling to experience the peace, solitude and quiet of majestic mountains and colorful high plains vistas offered by federal lands in the County. Recreational activities in Johnson County include camping, hiking, mountain biking, fishing, hunting, snowmobiling, skiing, and off-highway vehicles (OHVs).

Johnson County is home to the Bighorn National Forest and the Cloud Peak Wilderness, attracting tourists and recreationists. Continued access to these public areas is imperative to the health of the tourism and recreation industry in the County.

Resource Assessment and Legal Framework

Johnson County's landscape is a recreational haven. Amenities such as a bounty of wildlife, beautiful pines, grass prairies, and wildflowers offer year-round outdoor recreational opportunities. Recreation, both motorized and non-motorized, is a critical economic drawing point for the County. It attracts visitors who come to view wildlife, fish, hunt, cross country ski, snowmobile, hike, camp, and generally enjoy the opportunities that an open access motorized forest and range system provides. Road maintenance and access is important for the continued use of these recreation areas.

Wildlife and fisheries resources are extremely important to Johnson County both as a resource and as an economic driver. In 2012, approximately 21% of Johnson County's population was licensed to fish and 18% of the county's population was licensed to hunt (Sorensen et al., 2013). In 2015, \$25.3 million was generated by hunters and anglers from their outdoor activities on public lands, with approximately \$20.8 million of that spent by hunters and \$4.5 million spent by anglers in Johnson County. In total, hunters spent 74,000 days hunting and anglers spent 48,000 days fishing with approximately 8,600 fishing licenses sold within Johnson County. (Taylor & Foulke, 2015) Approximately 57% of those who hunt for pronghorn, mule deer, white-tailed deer, elk, and moose are nonresidents. Nonresidents hunters and anglers are extremely important to the economy of Johnson County through their use of food, lodging, equipment, and other supplies purchased within the county. In 2019, there were approximately 4,601 nonresidents hunters for pronghorn, 1,849 for mule deer, 1,016 for white-tailed deer, 763 for elk, and 1 for moose. Compared to resident hunters in 2019 where were 664 for pronghorn, 1,330 for mule deer, 1,948 for white-tailed deer, 2,346 for elk, and 4 for moose.

U.S. Forest Service Lands

In 2018, there was an estimated 343,000 visits to the Bighorn National Forest, with approximately 6,000 of those visits to the Cloud Peak Wilderness. The top-ranking activities on the BBNF include viewing natural features, viewing wildlife, relaxing, driving for pleasure, and hiking/walking. (USFS, 2018). The top five activities on the BBNF in Johnson County include fishing,



camping/picnicking, enjoyment of scenery, hunting, and hiking/backpacking (USFS, 2001). Within the BHNF there are several developed campgrounds including: Circle Park, Doyle, Lost Cabin, Middle Fork of Powder River, South Fork of Powder River, and Tie Hack. There is also the Hettinger Group Area, North Fork Picnic Ground, and the Hunter, Circle Park, and Elgin Park Trailheads. Dispersed camping is also a very popular recreational activity on the BHNF. (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005).

The USFS has struggled with dispersed camping and compliance issues since 2006. The Bighorn Mountain Coalition (BHMC) Dispersed Camping Taskforce has received extensive public comment regarding the need to address dispersed camping and its effects on forest resources (McKee, 2019). The BHMC submitted recommendations to the BHNF, of which an extension of the dates that require a 14-day camping limit has been enacted (USFS, n.d.-f).

BLM Lands

BLM lands within Johnson County offer a multitude of recreational opportunities. Recreation sites include the Red Wall/Hole-in-the-Wall area, the Dry Creek Petrified Tree Environmental Education Areas, Middle Fork Recreation Area, and Outlaw Cave Recreation Site which also includes the developed Outlaw Cave Campground, on the Middle Fork of Powder River. Dispersed camping is also a very popular recreational activity on BLM lands within the county.

There are four Special Recreation Management Areas (SRMAs) in Johnson County; Mosier Gulch, Dry Fork, Hole in the Wall, and Middle Fork Powder River. The management objectives for Mosier Gulch are as a day use area and picnic area; objectives for Dry Fork include day use, educational, and paleontological; objectives for Hole in the Wall include cultural and hiking/horseback riding; and objectives for the Middle Fork are fishing, hiking, and cultural. (BLM, 2016a) There are five Extensive Recreation Management Areas (ERMAs) in Johnson County; Face of the Bighorns/North Fork of Powder River, Gardner Mountain, Kaycee Stockrest, Powder River Basin, and South Bighorns. More information on SRMAs and ERMAs can be found above in Section 2.3 Special Designation and Management Areas.

Resource Management Objective:

- A. Recreational resources are managed to promote access and availability to the public for tourism and recreational uses, while maintaining benefits to the County's economy across important industries including agriculture, mineral development, and tourism.
- B. Tourist and recreational activities are managed based on the ability of the natural resources to sustainably handle the level of impact.

Priorities:

1. Promote responsible tourism through educational outreach that explains the historical significance of areas, sites, and roads.
2. Support and encourage a year-round multiple use management approach for federal lands as a means of continuing and enhancing recreation opportunities within the County while supporting other approved uses and private land rights.



3. Federal agencies coordinate with the County when implementing land use fees and/or fee increases, or the creation of new fees for the recreational use of federal lands within the County.
4. Support improved accessibility, maintenance, and development of trails to facilitate recreation and access to natural resources for residents and visitors, in coordination with adjacent landowners.
5. Federal agencies coordinate and consult with the County to manage tourist and recreational activities based on the ability of the natural resources to sustainably handle the level of impact.
6. Federal agencies should coordinate and consult with the County to minimize impacts from dispersed camping, especially in riparian areas.
7. Special recreation permit renewals and proposals by Federal agencies are coordinated with the County, as required by Federal agency mandates. Johnson County should be notified and given an opportunity to participate as a cooperating agency for special recreation permit approvals and renewals.
8. Federal agencies coordinate with the County to actively manage recreation to limit or minimize resource degradation.

6.2 LAW ENFORCEMENT

History, Custom, and Culture

Law enforcement is critically important to the citizens of Johnson County. The Wyoming Livestock Board partners with the Johnson County Sheriff's Department to aid in cases that transcend County and State boundaries. In general, cases regarding livestock theft are prosecuted through the County attorney's office. MOUs exist between Johnson County and the BBNF and Johnson County and the Wyoming State BLM Office that discuss the roles and responsibilities of each government's law enforcement.

Resource Assessment and Legal Framework

The Property Clause of the United State 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 State Constitution Article IV, Section 3, Clause 2. The Assimilative Crimes Act allows federal law enforcement agencies who lacks 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.-c)

NFMA gives the USFS similar law enforcement authority. 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.-g)

Law enforcement in Johnson County includes actions on both public and private lands. Federal lands within Johnson County are subject to law enforcement coordination when issues related to natural resource management and federal lands arise, such as livestock theft or search and rescue operations. State law enforcement officials operating in Johnson County include Wyoming Highway Patrol, Wyoming Department of Agriculture, Wyoming Livestock Investigation Bureau, and State Park Rangers. As the use of federal lands has increased, so has the need for law enforcement and coordination of federal law enforcement agents with the County Sheriff. The Johnson County Search and Rescue (JCSAR) also plays a role in responding to search and rescue calls across all public lands in Johnson County. The JCSAR operates under the authority of the Johnson County Sheriff.

Resource Management Objective:

- A. Public lands are managed for orderly use and management in coordination with the County Sheriff’s office.
- B. Law enforcement and emergency services have unfettered access to public lands to protect the health, safety, and welfare of residents and visitors.

Priorities:

1. Promote Federal agency recognition of the County Sheriff as the leading law enforcement official in the County.
2. The BLM and USFS should follow the MOUs signed with the County.
3. The County Sheriff’s Office is 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 land.
4. The County requires that Federal agencies allow safe and unfettered access to federal land for law enforcement and emergency services.
5. Continue to work with USDA for cooperative law enforcement on National Forest per the Cooperative Law Enforcement Agreement signed by the commissioners in May of 2019.

6.3 CULTURAL, HISTORICAL, & PALEONTOLOGICAL RESOURCES

History, Custom, and Culture

Johnson County offers a unique expression of human occupation over the last 11,500 years. Over this period flora, fauna, and the people who lived in the Bighorn Mountain region changed and



adapted. The earliest occupation is characterized by large game hunting and Clovis and Folsom projectile points. The oldest Clovis site discovered in Wyoming is the Colby site located near the base of the Bighorn Mountains. The Colby site includes cached mammoth remains dated 11,200 BP. With the harsh climatic conditions of the Early Archaic Period, indigenous people diversified to a hunting and gathering strategy that relied on a wider food base. There are cultural resource sites from this period present throughout the Bighorn Mountain foothills. The following period, the Late Plains Archaic, marked the appearance of side-notched points and more intensive communal bison hunting. Evidence of this period and the points used have been documented in the Powder River Basin. With the late Prehistoric Period came smaller side and corner-notched points thought to mark the use of the bow and arrow. Evidence in the Powder River and Bighorn Basins indicate that the area was influenced by culture and tradition from the Northwest Plains and the Great Basin. With the end of this prehistoric period began more intensified resource use including grinding tools, pottery, cairn lines used as game drivers, and more common petroglyphs and pictographs. (NPS, n.d.-a)

Tipi rings occur in greater number with the start of the Proto-Historic Period. In this time frame indigenous people were influenced by the introduction of the horse and European trading goods became available. Resources found from this period include conical timber lodges, game traps, rock art locations, burials, ceramics, and metal arrow heads. There is a prominent site from this period looking over the Powder River Basin. During this period, many different ethnicities occupied or regularly camped in the Bighorn Mountains including the Crow, Shoshone, Arapaho, Cheyenne, Teton Dakota, and Kiowa. Many historic sites in the area have not been linked to any ethnicity due to the lack of diagnostic materials remaining. (NPS, n.d.-a)

The Euro-American Period (1800 A.D. to present) marks the European colonization of the Bighorn Mountains and cultural contact between Native American peoples and Euro-Americans. The suppression of Native American religious use of the area and the development of homesteads and communities changed the landscape. During this period many of the historic homesteads, buildings, and ghost towns protected today were built. The development of trading and trapping routes, trading posts and military forts initiated the settlement of the area. Fort Kearny, the largest fort along the Bozeman Trail, is a historic site from this time. The settlement of Johnson County began in the 1870s, bringing with it livestock operations and irrigation development. (NPS, n.d.-a; Wyoming State Historic Site, National Landmark Interpretive Center, n.d.)



Many cultural resources have been identified throughout the region from this area’s long history of human occupation. These resources are valuable to both residents of Johnson County as well as Native

American communities. These resources can be divided into prehistoric and historic categories.

Included in the prehistoric resources are game and Indian trails, petroglyphs, camp and chipping sites, and game traps. Historic sites include homesteads, cemeteries, ghost towns, and rock

quarrying sites. Many significant cultural, paleontological, and archeological sites have been identified throughout Johnson County.



Johnson County Jim Gatchell Memorial Museum

Resource Assessment and Legal Framework

Johnson County’s traditional lifestyle has centered on agricultural pursuits and resource-based industries for generations. Preservation of remaining historic sites is important to maintain and preserve the cultures of historic and present Johnson County. Historic preservation of property enhances economic values and provides the basis for heritage tourism.

Historic and Archeological Resources

There are two acts that primarily protect historic and archeological resources. The National Historic Preservation Act (NHPA) was passed in 1966 and it authorized the Secretary of Interior to maintain and expand a National Register of Historic Places (NRHP). 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. 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 CFR 800). (National Preservation Institute, 2020).

For listing in the NRHP, a property or site should 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 NRHP 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.)

Traditional Cultural Property (TCP) are included in the NRHP and are properties eligible for inclusion based on associations with the cultural practices, traditional, beliefs, lifeways, arts, crafts, or social institutions of a living community. TCPs are rooted in a traditional community's history and are important in maintaining the continuing cultural identity of the community. (NPS, 2012)

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 eligible in its opinion for listing in the National Historic Register. See NHPA Section 101(c). Currently Johnson County does not have a Historic Preservation Commission to maintain the status of a certified local government.

Perhaps most influential on federal actions, Section 106 of the 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 Johnson County has 26 sites (not all are publicly accessible) listed in the National Register, including: (Wyoming SHPO, n.d.)

- AJX Bridge over South Fork and Powder River
- Beaver Creek Ranch Headquarters
- Blue Gables Motel
- Buffalo Main Street Historic District
- Cantonment Reno
- Carnegie Public Library
- Dull Knife Battlefield
- EDL Peloux Bridge
- EDZ Irigary Bridge
- Fort McKinney
- Fort Phil Kearny and Associated Sites
- Fort Reno
- HF Bar Ranch Historic District
- Holland House
- Johnson County Courthouse
- Lake Desmet Segment of the Bozeman Trail
- Main Street Historic District
- Methodist Episcopal Church
- Powder River Station – Powder River Crossing
- St. Luke’s Episcopal Church
- Sussex Post Office and Store
- TA Ranch Historic District
- Trabing Station – Crazy Woman Crossing
- Union Congregational Church and Parsonage
- US Post Office – Buffalo Main
- Wold Bison Jump

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 paleontology¹⁷](#)
- [Bureau of Reclamation, fossil resources¹⁸](#)
- [U.S. Fish and Wildlife Service, historic preservation¹⁹](#)



- [Bureau of Land Management, Paleontology²⁰](#)
- [National Park Service, Fossils and Paleontology²¹](#)

Resource Management Objective:

- A. Cultural, historical, geological, and paleontological resources are preserved and protected for current and future public education and enjoyment.

Priorities:

1. Cooperate with State and Federal authorities in identifying significant cultural resources in the County and evaluate the significance of proposed land use actions and their impact on cultural resources.
2. Agencies communicate with the County on known or potentially significant cultural resources for the County to have input into the management and protection of the resource.
3. Support and encourage making significant local cultural resources available for research and education, and strongly urge the protection of those cultural resources. However, 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 should not exceed one-quarter mile in width in most circumstances.
4. Support private property rights as paramount for cultural, historical, geological, and paleontological resources thought to be on private lands.
5. Require a full analysis of the impact each “decision” or proposed federal action will have on the local economy. If it is determined a decision will have significant negative impact on the local economy, the alternative/decision is not supported.

6.4 ECONOMIC AND SOCIOECONOMIC CONSIDERATIONS

History, Custom, and Culture

Johnson County is nearly 31% federally owned land with 830,720 acres of land under federal control. One of the main drivers of the Johnson County economy is agriculture. Stream water has been used for irrigation since the late 1870s. Since settlement of the valley, cattle ranchers and sheep herders were the primary residents of what is now present-day Johnson County. Of private land in the County, 97% is in agricultural use (1.5 million acres). Today’s cattle ranchers are heavily reliant upon grazing leases for federal lands to maintain healthy and productive stock. The livestock industry accounts for a substantial portion of Johnson County’s agricultural income, is the oldest continuing industry in the County, and is still a major user of federal land.

Mineral and materials mining is another long-standing sector of the Johnson County economy. Mining of coal, uranium, and bentonite, and production of oil and gas contributed to the economic development of the County and continue to be important industries today.

Resource Assessment and Legal Framework

The structure and trends within a region’s economy are important to local officials, State governments, Federal agencies, and the public in more effectively conducting and participating in public policy decision making processes.



In October of 2018, Johnson County, the University of Wyoming Extension, the Wyoming County Commissioner’s Association, and the Wyoming Department of Administration & Information developed a socioeconomic profile of Johnson County. This document and all updated socioeconomic profiles for Johnson County can be found [here²²](#).

Johnson County has a population of approximately 8,562 people. The largest industries within the county include Health Care & Social Assistance (655 people), Agriculture, Forestry, Fishing & Hunting (534 people), and Construction (425 people). Compared to other counties, Johnson County has a higher number of mining (11.4 times higher than expected), agriculture (10.6 times), and construction industries (1.59 times). The highest paying industries within the county are Information (\$250,001), Real Estate/Rental/Leasing (\$75,685), and Public Administration (\$63,897). The median household income in Johnson County is \$52,415. (Data USA, n.d.)

Recreation and tourism are the number two industries in the State of Wyoming. Johnson County is a gateway to significant seasonal visitor traffic coming to and from Yellowstone National Park. The City of Buffalo has increasingly become a location for travelers to stay en route to Yellowstone, Devil’s Tower, and Mt. Rushmore. Tourism is an important economic driver to Johnson County. In 1998 tourism represented 27% of total employment and in 2017 tourism represented 20% of employment within the county (Headwaters Economics, 2020). In 2019, approximately \$56.5 million was spent on travel in Johnson County, \$15 million was earned, and 630 jobs were supported by travel and tourism in the County (Dean Runyan Associates, 2020)

NEPA

NEPA can play a crucial role in the economic and socioeconomic 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 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 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 Trump Administration and the Council on Environmental Quality announced major regulation reforms to NEPA, including new rules trying to clarify what is a “major federal action.” The new regulations clearly demarcate that only actions that include major federal involvement and are major in scale are those actions that require NEPA. This means that those projects that the government has a minor role are not included. This also means that minor actions (such as allowing certain range improvements on a grazing allotment) are not included. *See* 85 F.R. 43304 (July 16, 2020). As of the finalization of this plan the rule is being challenged by several states and organizations.

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. (CEQ, 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).

Resource Management Objectives:

- A. The socioeconomic and economic viability of the County is prioritized, protected, and enhanced in all federal actions or decisions.
- B. Agencies follow the timing and page limit requirements set forth in the 2020 CEQ NEPA regulations.
- C. The County is included early in the scoping process whenever an agency action or decision may impact the economic or socioeconomic viability of the County.

Priorities:

1. Require consultation and coordination with the County at 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. Support consultation and coordination with the County to determine the full scope of potential social and economic effects of activities proposed on public lands, including economic impacts when access and use of federal land is proposed.



3. Support continued access to natural resources development/use on federal lands to maintain economically viable communities in the County.
4. Support “no net loss” in the County economic base due to Federal agency decisions. Include the County in all discussions regarding mitigation if necessary, to protect the economic base of the County.
5. 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.
6. Promote the economic and socioeconomic growth of the County.
7. Consultation and coordination between Federal agencies and the County regarding any issues and activities on public land that affect or influence the economic and socioeconomic viability of the County is required.
8. Support the implementation and maintenance of commitments made to support tourism and recreation in the county.
9. Support the implementation of deadlines, page limitations, and cooperation with local governments as set forth in 2020 CEQ regulations.



CHAPTER 7: AGRICULTURE

7.1 AGRICULTURAL PRODUCTION

History, Custom, and Culture

Agricultural lands contribute to the County's landscape and scenic beauty, provide wildlife habitat, and provide recreational opportunities for residents and visitors alike for hunting, fishing, snowmobiling and other tourism-related activities. Agriculture is an invaluable source of employment, affordable food, raw materials, and open space to the County. Agriculture also provides numerous opportunities for environmental stewardship to benefit local ecosystems and serves as key component of the County's sustainable economy.

Resource Assessment and Legal Framework

Agriculture is an important industry in Johnson County. In 2017, 74% of the land in Johnson County was devoted to agriculture. In 2012 75% of private land used for agriculture in the County was used as rangeland while approximately 2% was used for irrigated crops (Clear Creek Conservation District, 2017). The 2017 Johnson County Census of Agriculture Profile ranks the County as fifth in the state for sheep, goats, and wool; ninth in the state for fruits, tree nuts and berries; and 13th in the state for cattle and calves. The 2017 total market value for livestock products was \$41,049,000 and for crop products was \$3,098,000. Agriculture, particularly livestock production, is a major source of revenue and employment for Johnson County. (NASS, 2017)

The climate of the region provides for a short growing season that is often dry and cold. Irrigated agriculture relies on the distribution of water from rivers and reservoirs through canals and pipelines. Some or all of these may reside on or pass through federal and state lands where permitting issues are triggered for maintenance and expansion. According to the U.S. Census of Agriculture, Johnson County had 39,953 acres of irrigated land, of which 26,507 acres were in irrigated crops. This makes the retention and proper management of water rights a priority for the citizens of Johnson County.(NASS, 2017; United States Department of Agriculture National Agricultural Statistics Service et al., 2014)

The basis for these policy statements in this NRMP is to carry out the state mandate to protect agriculture.

“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))

Resource Management Objectives:

- A. Agricultural production is maintained as a viable and major component of the economy, custom, and culture of the County.



Priorities:

1. Support development of plans and policies that directly or indirectly affect agriculture with the intent of increasing the stability and expansion of the industry and encourage innovative techniques that improve the efficiency of crop and livestock production.
2. Support and assist agencies in quickly processing permits on federal lands for the construction, maintenance, or expansion of water distribution systems to private lands, and allowing maintenance where those rights already exist through a range improvement agreement.
3. Federal agency actions should be consistent with Right to Farm laws, to the extent applicable. Right to Farm laws should be considered when coordinating on federal and state land use decisions.
4. Support production agriculture and the responsible use of natural resources to sustain agricultural enterprises.
5. Agricultural property damage or crop loss caused by an escaped prescribed burn, fire suppression efforts, or damage caused by government agency action, resulting in economic loss in Johnson County, should be considered justification for economic compensation and restoration by the responsible agency to the property owner at current market values.
6. Wildlife and federal lands managers, including but not limited to the BLM, USFS, USFWS, Army Corps of Engineers, BOR, and WGFD, are expected to coordinate with private property owners to minimize impacts to private property and property rights.
7. Support streamlining the NEPA process for range improvement development and upgrades on public lands. Proposed range improvements should be approved in six months or less.
8. The individual that files for an improvement/development permit should be allowed to manage the improvement/development and the permit should be in their name if it is approved.
9. Discourage the conversion of arable, productive agricultural lands from agricultural production into rural residential housing.

7.2 LIVESTOCK AND GRAZING

History, Custom, and Culture

The vegetation in Johnson County evolved under tens of thousands of years of grazing and periodic fire. Grazing in the region began to shape the modern vegetation we see today around 18,000 years ago in the Pleistocene Epoch. Eventually these species were replaced by the wildlife we know today. Wildlife, wildfire and early humans continued to shape the vegetation of the basin. In the late 1600s to mid-1700s Native Americans obtained the horse and became pasture managers as well as wildlife managers, manipulating the vegetation and animal populations.

Permitted grazing on federal lands is a critical piece of livestock operations in Johnson County. The intermingled BLM and private lands allow ranching to continue in the County. Approximately 92% of the land managed by the BLM's Buffalo Field Office is managed for private grazing use (Johnson County Commissioners & Johnson County Planning and Zoning Commission, 2005).



Access to federal lands is critical to the continued ability to maintain the ranching community and the viability of the County. For additional information regarding federal land management for grazing in Johnson County refer to the JCCLUP.

Livestock grazing has been a major industry in Johnson County since early settlement. It continues to be a vital part of the custom and culture of the County as well as an economic driver.

Bureau of Land Management

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 Taylor Grazing Act 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 Taylor Grazing Act 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. There are 264 BLM grazing allotments in Johnson County covering approximately 1.8 million acres



BLM Range Improvements

All range improvements on BLM lands must be authorized by the agency. There are two options for authorization: (1) a Cooperative Range Improvement Agreement or (2) 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.

U.S. Forest Service

Livestock grazing within the Bighorn National Forest was historically important to settlers within the Bighorn Mountains. Currently, more than 28,000 cattle and 21,000 sheep graze on the Bighorn National Forest under term grazing permit. Within Johnson County there are 17 USFS grazing allotments encompassing approximately 190,048 USFS acres. There are 70 grazing permits permitted on the Bighorn National Forest.

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 act against the permittee for non-compliance with their grazing permit. Range Betterment Funds are available for planning and building rangeland improvements.

Resource Assessment and Legal Framework

With the Federal agencies managing most of the rangeland in the County, ranchers must rely on obtaining federal term grazing permits. A large part of the vegetation in the County is lower producing saltbush and sagebrush areas, while many of the forested leases are highly productive but with limited forage available due to dead and downed timber. 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 they can be impacted along with the local community. 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 Johnson County.



Reduction in livestock numbers on federal and state lands can be a result of natural factors, including wildfire and drought. The primary factors in determining livestock grazing capacity on federal land is the quality and availability of the resources. Proper grazing management is an important tool for management of the resources, and can be used to mitigate invasive species impacts, wildfire impact, and can improve rangeland health.

Livestock grazing, irrigated farming and other intensive agriculture are integral to this community'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.

Resource Management Objective:

- A. Livestock grazing is maintained as a viable major component of the economy, custom, and culture of the County.

Priorities:

1. Federal lands within Johnson 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, FLPMA, MUSY, and NFMA.
2. Livestock grazing management decisions are made based on the best available scientific information that is applicable to the rangeland resources in Johnson County. The scientific information used will be consistent with standards of the Data Quality Act.
3. Federal agencies' livestock grazing management guidelines incorporate standards and objectives that maintain the health, safety, and general welfare of the County's agricultural interests culturally and economically.
4. Work in coordination with Conservation Districts, local grazing boards and grazing permittees to develop and employ best management practices for the purpose of improving rangeland health with the goal of returning suspended AUM's to active status.
5. Work in coordination with Conservation Districts and grazing permittees to develop management practices that adhere to the 2005 Forest Plan and its instruction that the Forest Service strive to maintain or exceed the current allocation of 113,000 AUMs while meeting desired conditions.
6. Grass banks are supported as an acceptable management practice and federal agencies support maintenance of range improvements on grass banks and forage reserves.
7. Allotment retirements are not supported (An allotment retirement is the closure of a grazing permit/allotment).
8. Existing forage reserves should be phased out and retired grazing allotments should be returned to part of the actively managed grazing system. (Grass banks, or forage reserves, are areas where property owners/managers lease land to ranchers to assist with conservation-related projects or resource recovery).
9. Support management plans generated for the overall health of all natural resources. Plans specifically managing for one species are not supported.
10. Support livestock grazing on all federally owned and operated lands as an integral part of habitat management.



11. Support opening of Conservation Reserve Program lands for grazing and haying in times of drought, economic need, or other emergencies as allowed by statute.
12. Site-specific reviews conducted with the permittee/lessee should be used to determine the appropriate grazing rest or deferment period post-fire.
13. Complete full site-specific economic and resource analysis of proposed allotment closures within one-year of closure.
14. Grazing allotments in temporary non-use (the authorized withholding, on an annual basis, of all or a portion of permitted livestock use in response to a request of the permittee or lessee 43 CFR § 4100.0-5) are made readily available for use. If a resource concern exists, the grazing plan should acknowledge the concern and utilize livestock as a tool to help in recovery if feasible. If the allotment is in non-use and the range is meeting Wyoming rangeland standards or desired conditions, the grazing plan should fully utilize all adjudicated grazing AUMs.
15. Support creation of adaptive grazing management guidelines that allow permittees to respond to changes in resource conditions. These should include focused monitoring, triggers and responses, and alternative management.
16. The reduction of domestic livestock grazing AUMs to provide additional forage for another species or strictly for conservation purposes is not supported.
17. AUMs on federal lands should not be reduced unless a documented resource condition indicates a need for temporary reduction to improve condition. Any reduction should include a plan to reinstate AUMs when the resource condition has been addressed.
18. Timely processing of all term grazing permit renewals is a priority of the County.
19. Development of the grazing term permit renewal process should consider actions proposed by the permittee/lessee.
20. All federal and state land management agencies should use the most current Ecological Site Descriptions developed by the NRCS to create appropriate objectives for livestock and wildlife management.
21. Native seed mixes consistent with the Ecological Site Description and free of noxious weeds and invasive species are encouraged for all reclamation efforts and should be beneficial to both livestock and wildlife and developed collaboratively with the permittee. Seed mixes of introduced species may be utilized when they meet reclamation objectives so long as they are the best ecological match for the site and purpose of the seeding.
22. Agencies should collaboratively develop and implement rangeland monitoring programs in cooperation with the permittee. Use currently accepted scientifically based monitoring methods and return intervals and utilize properly trained rangeland personnel with an understanding of rangeland and its management to ensure proper collection and analysis of data.
23. Support the review and incorporation of legal and credible data collected by a permittee, contractors or subcontractors of a permittee, qualified team, or local government for use in management decisions.
24. Support consultation, cooperation, and collaborative efforts to ensure that overall rangeland health is maintained through monitoring and implementation of well-designed livestock grazing management plans on public land allotments.



25. Federal agencies should use range improvement and noxious weed control funds on grazing allotments in a timely manner.
26. Encourage development of additional rangeland improvements when the opportunity arises.
27. Johnson County supports improving rangeland health to accomplish the 2005 Forest Plan statements and goals.
28. Grazing rest prescriptions related to either wildfires or prescribed burns will be determined on a site-specific basis. If grazing on federal lands is temporarily suspended due to fire, recommence grazing based on monitoring and site-specific rangeland health determinations rather than predetermined timelines. Return livestock grazing to pre-fire levels when post-fire monitoring data shows established objectives have been met or have been achieved to an extent allowed by site potential. Require the use of credible data as previously defined to make these determinations. Initial post-fire monitoring data should be collected within two growing seasons of the fire and can be collected outside the agency if the appropriate monitoring protocols are followed along with credible data criteria.



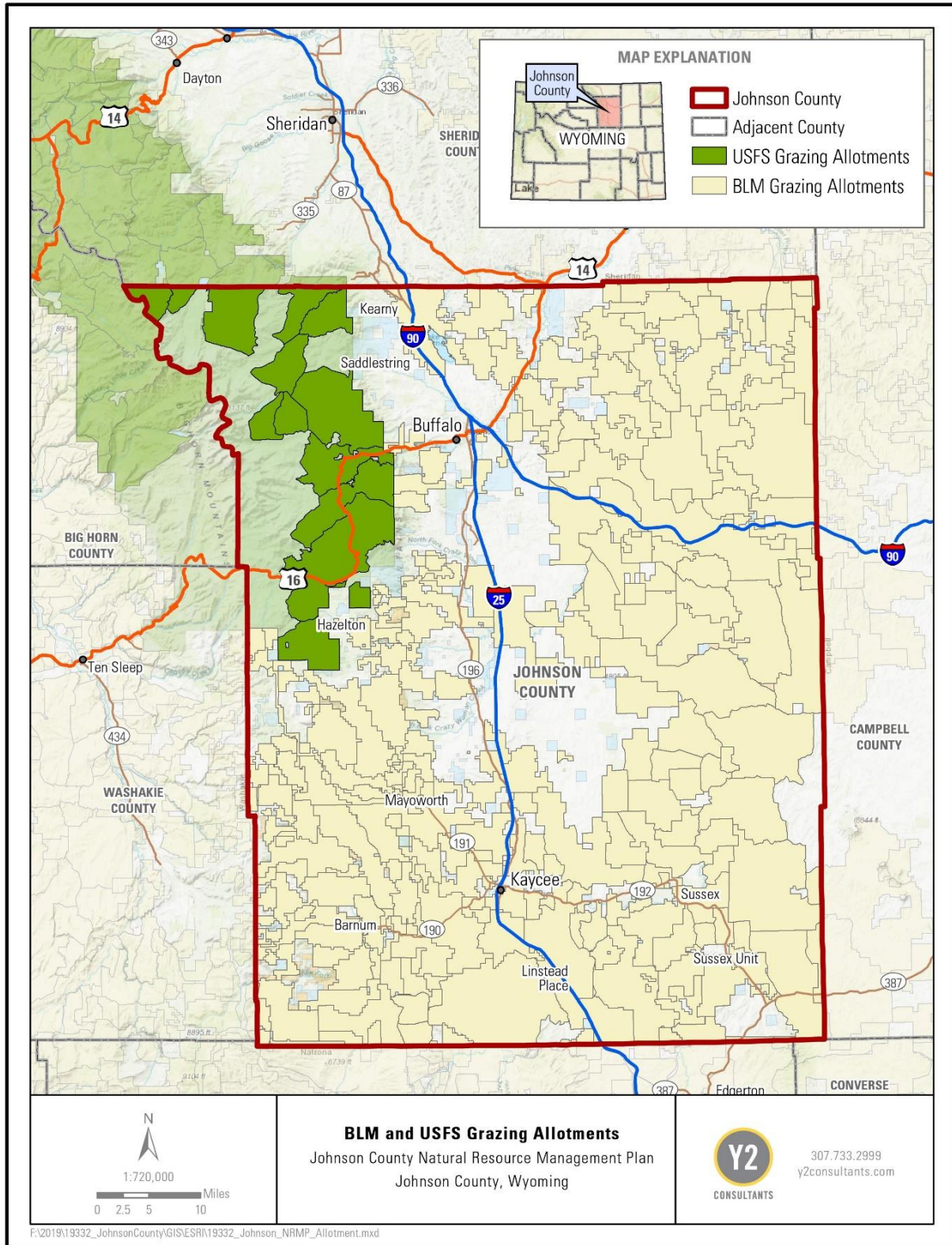


Figure 18. Johnson County Grazing Allotments.



7.3 PREDATOR CONTROL & LIVESTOCK PREDATION

History, Custom, and Culture

Predatory wildlife is important to the ecology of an ecosystem. However, predators have negative impacts on livestock operations, developing communities, and other agriculture operations. For these reasons, it is important to properly manage predators to ensure safe communities and stock, and healthy functioning ecosystems.

During the settlement of the western states, depredation was an issue across livestock operations. Predators were controlled on an individual basis until the early 1900s, when stockgrowers began asking for government assistance. 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.).

Resource Assessment and Legal Framework

The Animal and Plant Health Inspection Service (APHIS) is located within the 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 established predator control statutes in Title 11, Chapter 6. The statutes provide for general provisions, district boards, and the Wyoming State Animal Damage Management Board.

Within the County, the Johnson County Predator Control Board directly administers the Wildlife Damage Program. Wildlife population management through sportsman hunting and trapping also occurs throughout the County. 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 predators in Johnson County and the surrounding area include mountain lion, grizzly bear, black bear, gray wolf, bobcat, coyote, fox, skunk, raccoon, and multiple birds of prey. Eagles and coyotes can have a significant effect on sheep operations in the County. It is important to recognize that changes in wildlife population dynamics and management in surrounding areas are likely to influence wildlife populations and behavior in Johnson County. Pursuant to State statute, the County establishes and implements a cooperative plan for predator control that incorporates coordination with APHIS and County resources where available.

Resource Management Objective:

- A. Predator populations are managed to maintain healthy ecological levels, while still prioritizing reducing or eliminating the occurrence of livestock depredation and the health and welfare of citizens of Johnson County.



Priorities:

1. Support selective predator control as a valid means of increasing the productivity of lands within the County and as a valid method of attaining sustainability of the wildlife and domestic livestock populations.
2. Predator control measures are supported on all lands within the County.
3. Support recognized proactive efforts such as aerial hunting, snares, and leg traps to control predator populations.
4. The County opposes restrictions to current predator control methods.
5. Predator species such as grizzly bears and wolves should be deterred from migrating or re-locating to areas that impact the health, safety, and welfare of the people.
6. When addressing a decline in sensitive species, predator control should be employed prior to placing any restrictions on resource-based industries like livestock grazing. Only when predation is determined to not be the cause of decline should restrictions on the resource industries be considered prior to predator management.
7. Federal agencies should coordinate with the County in the determination of any impact of management of predator species when related to the management of ESA listed species or the use of APHIS funds, as required by Federal agency mandates. This includes impacts on the economy, culture, custom and safety of the residents of the County.
8. Support predator control as an effective method for protecting ESA listed species and game bird populations to include, but not limited to, sage-grouse, chukars, quail, Hungarian partridges, pheasants, turkeys, ducks, geese, doves, and swans.
9. Support predator control as a valid method of increasing the productivity of the public lands upon which the economy of the County is dependent. Productivity includes higher survivability of the offspring of wildlife and livestock.
10. The use of M44's or Cyanide bombs for Predator control on public lands should be discouraged, unless properly monitored by the local control board, as it raises the potential of conflicts with recreating public activities and their pets.

7.4 NOXIOUS WEEDS AND INVASIVE SPECIES

History, Custom, and Culture

Noxious and invasive species can be plants, animals, diseases or insects. Invasive species and pest management is defined as the ability to control species and pests that interfere with management objectives. An invasive species can be a native or non-native species that is occurring where it is not wanted or in unwanted numbers that may result in negative economic impacts. A noxious weed is any plant designated by Federal, State, or Local government officials as injurious to public health, agriculture, recreation, wildlife, or property. Once a weed is classified as noxious, authorities can implement quarantines and take other actions to contain or destroy the weed and limit its spread. (Weed Science Society of America, 2016)

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 control, etc.).



- Mechanical & 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 (commercial applicator training and certification, etc.).
- Rodent control (minimize disease threats and control losses).
- Board of County Commissioners actions (emergency declarations, budgeting, public meetings, etc.) (Wyoming Weed and Pest Council, n.d.).

Johnson County has traditionally practiced weed and pest control to increase the productivity of lands within the County and to promote the health, safety, and general welfare of residents. The Johnson County Weed & Pest “strives to have effective programs for the management of noxious weeds and pests by promoting and coordinating management and control through integrated pest management techniques, cooperation with landowners, agencies, organizations, and by providing technical expertise and education opportunities to all within the county” (Johnson County Weed and Pest, 2020)

The Johnson County Weed & Pest was established per the Wyoming Weed & Pest Control Act of 1973, which stated that all private, state, federal, and municipally owned lands are included in the District with the boundaries of the District the same as those of the county.

Resource Assessment and Legal Framework

The Wyoming Weed and Pest Act of 1973, as enacted by the legislature of Wyoming, created 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)

The District Board accepts the directive of the Act and takes their responsibilities seriously. Programs are in place with the long-term goal of continuity and sustainability in managing Designated Weeds and Pests and Declared Species. All control tactics within the Integrated Pest Management toolbox are considered, within the limitations of an annual budget. Realizing in most cases eradication is not possible across a landscape, it still becomes the primary focus of



new or insipient invasions. Paramount to that effort is the statewide concept of Early Detection Rapid Response and the Play-Clean-Go initiative.

Another State Statute, the Special Management Program (SMP), formally known as the Leafy Spurge Law, provides for a District to request an additional mill levy from the County Commissioners for the purpose of implementing an integrated management system on up to two undesirable plants, pests or combination thereof. However, leafy spurge shall receive priority in the program. The District had carried out SMPs on leafy spurge and salt cedar until recently, when the mill values started to decline. Additionally, the District had been able to reduce salt cedar infestations to the point where that species could be adequately funded through the District's General fund under the first mill. Accordingly, 100% of the funding generated under the SMP mill levy goes towards leafy spurge control in the County. Under this Statute, all State or Federal agencies owning or administering lands which are untaxed for the purpose of this Act, shall contribute the total cost of the treatment program on those lands, obviously within the limitations of their respective budgets.

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.

Johnson County works to suppress and eradicate all federally designated, State of Wyoming designated, and Johnson County declared weeds and pests. Additionally, the County pursues efforts to educate the public about invasive species and pests that are a threat to Johnson County. (Johnson County Weed and Pest, 2020)

The current federal noxious weeds list is maintained on the [USDA Plants Database](#)²³ (NRCS, 2019). The declared Johnson County noxious weeds are:

- Wild licorice (*Glycyrrhiza lepidota*)
- Common mullein (*Verbascum thapsus*)
- Curly dock (*Rumex crispus*)
- Common Cocklebur (*Xanthium strumarium*)
- Puncturevine (*Tribulus terrestris*)
- Buffalobur (*Solanum rostratum*)
- Tall larkspur (*Delphinium exaltatum*)
- Black Henbane (*Hyoscyamus niger*)
- Curlycup gumweed (*Grindelia squarrosa*)
- Moth Mullein (*Verbascum blattaria*)
- Rocky Mtn Bee Plant (*Cleome serrulata*)
- Orange Hawkweed (*Pilosella aurantiaca*)

Currently the Weed and Pest does not have cheatgrass on its Declared list nor is it on the State Designated list, mostly due to the cost of controlling the species. However, the County recognizes Weed and Pest's role in coordinating efforts with State and Federal Agencies for cheatgrass control due to its threat to grassland and sagebrush ecosystems, wildlife and livestock grazing and health.



In addition to these plants, aquatic plants like hydrilla (*Hydrilla verticillata*), Eurasian watermilfoil (*Myriophyllum spicatum*), curly pondweed (*Potamogeton crispus*) and didymo (rock snot) (*Didymosphenia geminata*) are of concern. A number of 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. White pine blister rust (*Cronartium ribicola*), pine borers (*Dendroctonus* spp.), and spruce budworms (*Choristoneura* spp.) can also be problem invaders in the forested regions of the County.

Resource Management Objective:

- A. Noxious weeds and invasive species (plants and animals) are managed to maintain healthy ecological levels using best management practices.

Priorities:

1. Support and encourage control efforts on the State Designated List in Wyoming and Johnson County Declared species.
2. Support and encourage State and Federal Agency participation in cooperative programs for Designated and Declared species.
3. Promote coordination between Local, State, and Federal agencies to allow Johnson County Weed & Pest access to and across public lands as necessary to carry out active control measures on public, state and private lands.
4. Evaluate prescribed burns and capitalize on wildfires as an opportunity to control weed species and enhance rangeland health .
5. Encourage prescriptive grazing techniques to control or manage noxious or invasive plant species. Work with State and Federal land managers to provide flexibility for permittees/lessees to utilize this control option.
6. Encourage weed control through the use of bio-agents specific to the target weed.
7. Elevate the awareness and priority of controlling any new or existing infestations of Ventenata in Johnson County.
8. Elevate the awareness and education of Medusahead rye to the public to keep it out of Johnson County.
9. Support ongoing efforts and additional research to control cheatgrass populations.
10. The County does not support listing of cheatgrass as a noxious weed.
11. The County will support habitat enhancement projects that have a defined and funded weed control and monitoring plan over the anticipated life of the enhancement.
12. The County encourages Federal agencies to consider how their activities might have an adverse effect on Historical or Cultural sites in the County.
13. Support and encourage Federal agency processes that consider adaptive or new control techniques and pesticides.
14. The County recognizes prairie dogs, as a State Designated pest, represent a production and economic concern for the landowner and the County, a hazard to livestock production, and a serious threat to rangeland health into the future. The County therefore supports and encourages programs to mitigate prairie dogs; and encourages State and



Federal Agencies to adopt policies allowing for prairie dog control as good neighbors and responsible stewards of the lands they are entrusted to manage.

15. The County supports weed control practices that include mapping as an integrated management tool.
16. Support the prevention and management of aquatic nuisance species, although not listed Designated or Declared, (i.e. zebra mussels, quagga mussels) on all waters within Johnson County.
17. Support the Play-Clean-Go initiative and other education/awareness programs for public and private land users in weed identifications and understanding vectors of weed spread.
18. Support the use of aerial equipment such as drones, helicopters or fixed wing as a critical use for weed monitoring and control.
19. Support herbicide use in the wilderness through non-motorized ground treatments.
20. Support the management and control of annual grasses (i.e. cheatgrass) on public lands to lessen its spread and detrimental effects to landscapes.
21. Ongoing research and experimental options should be supported for the management of invasive and noxious species.
22. County supports and encourages growing and feeding of certified weed free forage and hay, with certifications based on the standards created by North American Invasive Species Management Association (NAISMA) and adopted by the Wyoming Weed and Pest Council.
23. Support feeding of hay and other forage on public lands.



REFERENCES

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Citations

- APHIS. (n.d.). *USDA APHIS | Wildlife Services*. Retrieved September 18, 2019, from https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/SA_Program_Overview
- BHNF. (2005). *Final Environmental Impact Statement and Revised Land and Resource Management Plan Record of Decision*. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fswdev3_009063.pdf
- Blackstone, Jr., D. L., & Huntoon, P. W. (1984). *Tectonic Structures Responsible for Anisotropic Transmissivities in the Paleozoic Aquifers Southern Bighorn Basin, Wyoming* (84-02.pdf; pp. 1–74). <http://library.wrds.uwyo.edu/wrp/84-02/84-02.pdf>
- Bleizeffer, D. (2015). *Coalbed Methane: Boom, Bust and Hard Lessons | WyoHistory.org*. <https://www.wyohistory.org/encyclopedia/coalbed-methane-boom-bust-and-hard-lessons>
- BLM. (n.d.-a). *Areas of Environmental Concern*. Retrieved July 23, 2020, from https://www.blm.gov/or/plans/rmpswesternoregon/files/prmp/RMPWO_V1_Chapter_3_ACEC.pdf
- BLM. (n.d.-b). *Fortification Creek WSA* [Text]. Retrieved April 2, 2020, from <https://www.blm.gov/visit/fortification-creek-wsa>
- BLM. (n.d.-c). *Programs: Public Safety and Fire: Law Enforcement: Laws and Regulations | Bureau of Land Management*. Retrieved November 20, 2020, from <https://www.blm.gov/programs/public-safety-and-fire/law-enforcement/laws-and-regulations>
- BLM. (2010). *BLM Wyoming Sensitive Species Policy and List*. <https://www.blm.gov/download/file/fid/20067>
- BLM. (2015). *Buffalo Field Office Approved Resource Management Plan*. 828.
- BLM. (2016a). *Wyoming Public Lands Initiative Potential WSA Options for Johnson County*. http://www.wyo-wcca.org/~wcca/files/7514/8943/8311/WSA_options.pdf
- BLM. (2016b, September 11). *Programs: Planning and NEPA: Planning 101: Special Planning Designations: Areas of Critical Environmental Concern* [Text]. <https://www.blm.gov/programs/planning-and-nepa/planning-101/special-planning-designations/acec>
- BLM. (2016c, September 30). *Programs: National Conservation Lands: About: Wilderness* [Text]. <https://www.blm.gov/programs/national-conservation-lands/wilderness>
- BLM. (2017a, July 6). *Programs: National Conservation Lands: Wyoming: Gardner Mountain WSA* [Text]. <https://www.blm.gov/Programs-National-Conservation-Lands-Wyoming-Gardner-Mountain-WSA>
- BLM. (2017b, July 7). *Programs: National Conservation Lands: Wyoming: North Fork of the Powder River WSA* [Text]. <https://www.blm.gov/Programs/National-Conservation-Lands/Wyoming/North-Fork-of-the-Powder-River/WSA>



- Budd-Falen, K. (2018). *Local Government Participation in Federal Agency Decision Making*.
- Bureau of Land Management. (2012a). *1283 Data Administration and Management Handbook*. https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter_blmpolicymanual1283.pdf
- Bureau of Land Management. (2012b). *A Desk Guide to Cooperating Agency Relationships and Coordination with Intergovernmental Partners*. Bureau of Land Management Division of Decision Support, Planning and NEPA. https://www.ntc.blm.gov/krc/uploads/623/BLM_DeskGuide_CA_Relationships_2012.pdf
- Bureau of Land Management. (2015). *Environmental Assessment DOI-BLM-MT-C030-2014-189-EA*. https://www.blm.gov/sites/blm.gov/files/MT-DAKs%20NDFO_July2015_LeaseSaleEA_DRAFT_9Feb2015.pdf
- Bureau of Land Management. (2016a, August 15). *About: History of BLM: National Timeline* [Text]. <https://www.blm.gov/about/history/timeline>
- Bureau of Land Management. (2016b, August 18). *Programs: Cultural Resources: Paleontology* [Text]. <https://www.blm.gov/paleontology>
- Bureau of Land Management. (2016c, October 21). *Programs: Natural Resources: Wetlands and Riparian: Riparian Health: Wyoming* [Text]. <https://www.blm.gov/programs/natural-resources/wetlands-and-riparian/riparian-health/wyoming>
- CEQ. (2010). *Fact Sheet: CEQ Report on Environmental Impact Statement Timelines (2010—2018)*. 1.
- City of Helena. (2011). *Helena Tenmile WTP LT2 Watershed Control Plan*. 17.
- Clary, W. P., Webster, B. F., & USFS Intermountain Research Station. (1989). *Managing grazing of riparian areas in the Intermountain Region* (INT-GTR-263; p. INT-GTR-263). U.S. Department of Agriculture, Forest Service, Intermountain Research Station. <https://doi.org/10.2737/INT-GTR-263>
- Clear Creek Conservation District. (2017). *Lake DeSmet Conservation District Long Range Natural Resource Land Use Plan*.
- Cloud Peak Skyway. (n.d.). *America's Scenic Byways*. Retrieved April 2, 2020, from <https://trips.furkot.com/byway/2165>
- Coal Fields. (n.d.). *Coal In Johnson County, Wyoming*. The Coal Fields™. Retrieved July 7, 2020, from <https://thecoalfields.com/usa/wyoming/johnson-wy019>
- Commission of the European Communities. (1986). *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): EC Annual Report*. Office for Official Publications of the European Communities.
- Data USA. (n.d.). *Johnson County, WY | Data USA*. Retrieved March 16, 2020, from <https://datausa.io/profile/geo/johnson-county-wy#economy>
- Davis, J. W. (2014, November). *The Johnson County War: 1892 Invasion of Northern Wyoming* / *WyoHistory.org*. <https://www.wyohistory.org/encyclopedia/johnson-county-war-1892-invasion-northern-wyoming>
- Dean Runyan Associates. (2020). *Wyoming Travel Impacts Calendar Year 2019*. https://ss-usa.s3.amazonaws.com/c/308476362/media/22765e8c93a7c87be89825314693547/WY19_Impacts%20%281%29.pdf



- deCalesta, D. S. (n.d.). *Predator Control: History and Policies*. Oregon State University Extension Service.
- Drilling Edge. (2020). *Johnson County, WY Permits, Production, Wells & Operators*. Drilling Edge. <http://www.drillingedge.com/wyoming/johnson-county>
- Ecosystem Research Group. (2017). *Bighorn Forest Roadless Collaborative: Final Report & Recommendations*.
- Edmunds, D. R., Kauffman, M. J., Schumaker, B. A., Lindzey, F. G., Cook, W. E., Kreeger, T. J., Grogan, R. G., & Cornish, T. E. (2016). Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. *PLOS ONE*, 11(8), e0161127. <https://doi.org/10.1371/journal.pone.0161127>
- EPA, O. (2014, April 11). *Process of Reviewing the National Ambient Air Quality Standards* [Policies and Guidance]. US EPA. <https://www.epa.gov/criteria-air-pollutants/process-reviewing-national-ambient-air-quality-standards>
- EPA, R. 08. (2014, February 25). *Delegations of Authority for NSPS and NESHAP Standards to States and Tribes in Region 8* [Announcements and Schedules]. US EPA. <https://www.epa.gov/region8/delegations-authority-nsp-and-neshap-standards-states-and-tribes-region-8>
- Executive Order 13352*. (2017, July 31). FedCenter. <https://www.fedcenter.gov/Bookmarks/index.cfm?id=57>
- Farquhar, B. (2014). *Johnson County, Wyoming* | *WyoHistory.org*. <https://www.wyohistory.org/encyclopedia/johnson-county-wyoming>
- Federal Land Ownership: Overview and Data*. (2018, March 22). https://www.everycrsreport.com/reports/R42346.html#_Toc476565242
- Federal Land Policy and Management Act, Pub. L. No. 94–579 (1976).
- FEMA. (n.d.-a). *Community Assistance Program—State Support Services Element*. Retrieved December 16, 2019, from <https://www.fema.gov/community-assistance-program-state-support-services-element>
- FEMA. (n.d.-b). *FEMA’s National Flood Hazard Layer (NFHL) Viewer*. Retrieved December 16, 2019, from <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>
- FEMA. (n.d.-c). *Risk Map Progress—Mapping Information Platform Studies Tracker*. ArcGIS. Retrieved February 15, 2019, from <http://www.arcgis.com/home/webmap/viewer.html?webmap=6331cc6b45734c4eabfde6102d5fc0b1&extent=-148.9197,13.1588,-46.0876,55.5312>
- FEMA. (n.d.-d). *Risk Mapping, Assessment and Planning (Risk MAP)*. Retrieved December 16, 2019, from <https://www.fema.gov/risk-mapping-assessment-and-planning-risk-map>
- FEMA. (2020). *Federal Emergency Management Agency Community Status Book Report: Wyoming Communities Participating in the National Flood Program*. <https://www.fema.gov/cis/WY.html>
- Forest Service: Rocky Mountain Region. (2005). *Bighorn National Forest Revised Land and Resource Management Plan* (p. 1:1-4:7).
- Global Energy Institute. (2013, February 1). *Benefits of Keystone XL*. Global Energy Institute. <https://www.globalenergyinstitute.org/benefits-keystone-xl>



- Gregory, R. W. (2016). *Uranium: Geology and Applications*. Wyoming State Geological Survey. <https://www.wsgs.wyo.gov/energy/uranium.aspx>
- Headwaters Economics. (2020). *A Profile of Industries the Include Travel & Tourism Johnson County, Wyoming*.
- HKM Engineering Inc., Lord Consulting, & Watts and Associates. (2002). *Powder/Tongue River Basin Plan Final Report*.
- Johnson County Commissioners, & Johnson County Planning and Zoning Commission. (2005). *Johnson County Comprehensive Land Use Plan*.
- Johnson County Weed and Pest. (2020). *Johnson County Weed & Pest: About-Us*. <http://www.jcweedandpest.com/About-Us.html>
- Libra, R., Doremus, D., & Goodwin, C. (1981). *Volume II-A: Occurrence and Characteristics of Ground Water in the Bighorn Basin, Wyoming* (p. 156).
- McKee, D. (2019). *Dispersed Camping Brief*.
- Multiple-Use Sustained-Yield Act of 1960 As amended through December 31, 1996, Pub. L. No. 104–333, 10 (1960).
- NASS. (2017). *Johnson County Wyoming Agriculture Census Profile*. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Wyoming/cp56019.pdf
- National Conference of State Legislatures. (2019, February 1). *State Renewable Portfolio Standards and Goals*. National Conference of State Legislatures. <http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx>
- National Horse & Burro Rangeland Management Coalition. (2015). *Terms and Definitions*. National Horse and Burro Rangeland Management Coalition. <http://www.wildhorserange.org/terms-and-definitions.html>
- National Park Service. (2020, March). *Laws, Regulations, & Policies—Fossils and Paleontology*. <https://www.nps.gov/subjects/fossils/fossil-protection.htm>
- National Wild and Scenic Rivers System. (n.d.). *Wyoming Wild and Scenic Rivers*. Wild And Scenic Rivers System. Retrieved March 23, 2020, from <https://www.rivers.gov/wyoming.php>
- National Environmental Policy Act 1969, Pub. L. No. 91–190 (1969).
- Nesser. (1986). *Soil Survey of Bighorn National Forest, Wyoming. Parts of Big Horn, Johnson, Sheridan, and Washakie Counties*. https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/wyoming/bighornNF_WY1986/bighorn.pdf
- NPS. (n.d.-a). *National Historic Landmark Nomination: Medicine Wheel/Medicine Mountain*.
- NPS. (n.d.-b). *National Park Service History: National Park System Timeline*. History E-Library. Retrieved November 13, 2018, from https://www.nps.gov/parkhistory/hisnps/npshistory/timeline_annotated.htm
- NPS. (2012). *National Register of Historic Places—Traditional Cultural Properties (TCPs) A Quick Guide for Preserving National American Cultural Resources*.
- NRCS. (n.d.-a). *Soil Surveys by State | NRCS Soils*. Retrieved December 16, 2019, from <https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=WY>
- NRCS. (n.d.-b). *Web Soil Survey*. Retrieved February 25, 2019, from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>



- NRCS. (2018, March 17). *Soil Health* | NRCS Soils. <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>
- NRCS. (2019, August). *Welcome to the PLANTS Database* | USDA PLANTS. <https://plants.sc.egov.usda.gov/java/>
- NRCS, BLM, & USFS. (2006). *Grazing Management Processes and Strategies for Riparian- Wetland Areas*. <https://www.blm.gov/or/programs/nrst/files/Final%20TR%201737-20.pdf>
- Office of Federal Lands Highway. (2018, July). *Office of Federal Lands Highway- About*. US Department of Transportation Federal Highway Administration. <https://flh.fhwa.dot.gov/about/>
- Office of Management and Budget. (2004). *Memorandum: Issuance of OMB's "final Information Quality Bulletin for Peer Review."* https://www.cio.noaa.gov/services_programs/pdfs/OMB_Peer_Review_Bulletin_m05-03.pdf
- Painter, J. E., Hlavsa, M. C., Collier, S. A., Xiao, L., & Yoder, J. S. (2015). *Morbidity and Mortality Weekly Report: Cryptosporidiosis Surveillance—United States, 2011–2012*.
- Plafcan, M., Cassidy, E. W., & Smalley, M. L. (1993). *Water Resources of Big Horn County, Wyoming*. 148.
- RESPEC. (2017). *Buffalo Municipal Watershed Wildfire Hazard Mitigation Assessment*.
- Shell, J., & Johnson County. (2017). *Johnson County Community Wildfire Protection Plan—Evaluation and Update*.
- Social Resources for Western Wyoming. (n.d.). *Conservation Districts*. Wyoming Social Resources Information. Retrieved December 16, 2019, from https://www.wyosocialresources.info/social_resources/conservation-districts/
- Sorensen, T., Boston, S., Edwards, J., & Gerhardt, T. (2013). *Participation in Hunting and Angling in Wyoming*.
- State of Wyoming. (2020, February 13). *Wyoming Mule Deer and Antelope Migration Corridor Protection Executive Order 2020-01*. Google Docs. https://drive.google.com/file/d/1TLuj1UGcRTjOvBklmP4qwjehSVmGjch8/view?usp=sharing&usp=embed_facebook
- Surdam, R. C., WY USGS, & De Bruin, R. H. (2007). *Oil and Gas Map of the Powder River Basin*.
- Sutherland, W. M. (2014). *Wyoming Bentonite*. Wyoming State Geological Survey. <https://www.wsgs.wyo.gov/minerals/industrial-minerals.aspx>
- Taylor, D. T., & Foulke, T. (2015). *University of Wyoming, Department of Agricultural & Applied Economics AAAAdd*. 15.
- The Diggings. (2020). *Mining In Johnson County, Wyoming | The Diggings™*. The Diggings. <https://thediggings.com/usa/wyoming/johnson-wy019>
- United States Department of Agriculture National Agricultural Statistics Service, Vilsack, T., & Clark, C. Z. F. (2014). *2012 Census of Agriculture* (Wyoming State and County Data). https://www.nass.usda.gov/Publications/AgCensus/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Wyoming/wyv1.pdf
- University of Wyoming. (n.d.). *Wyoming Floods*. Retrieved December 16, 2019, from <http://wyofloods.wrds.uwyo.edu/>
- US Department of the Interior. (2015, May 31). *Land and Water Conservation Fund* [Government]. U.S. Department of the Interior. <https://www.doi.gov/lwcf>



- U.S. Fish and Wildlife Service. (n.d.). *Environmental Conservation Online System*. Retrieved January 30, 2020, from <https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=08077>
- US Forest Service. (1982, September 30). *National Forest System Land and Resource Management Planning 1982 Rule*. <https://www.fs.fed.us/emc/nfma/includes/nfmareg.html>
- U.S. Forest Service. (2010). Appendix C. In *Bighorn National Forest Revised Land and Resource Management Plan*. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5166503.pdf
- US Forest Service. (2013). *FSH 1909.12—Process Supporting Land Management Planning*. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5409879.pdf
- U.S. Forest Service. (2017). Chapter 2670—Threatened, endangered, and sensitive plants and animals. In *FSM 2600—Wildlife, fish, and sensitive plant habitat management*. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd553653.docx
- USDA Forest Service. (2001). *Final Environmental Impact Statement for the Northern Great Plains Management Plan Revision*. https://www.fs.usda.gov/detail/mbr/landmanagement/planning/?cid=fsbdev3_025111
- USDA: Soil Science Division Staff. (2017). *Soil Survey Manual (SSM)*. https://www.nrcs.usda.gov/wps/portal/nrcs/detail//?cid=nrcs142p2_054262
- USFS. (n.d.-a). *Bighorn National Forest 2019 Annual report*. Retrieved October 5, 2020, from https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd683778.pdf
- USFS. (n.d.-b). *Bighorn National Forest Final Environmental Impact Statement for the Revised Land and Resource Management Plan Appendix E*. Retrieved July 23, 2020, from https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fswdev3_009082.pdf
- USFS. (n.d.-c). *Bighorn National Forest—Cloud Peak Wilderness*. Retrieved September 17, 2019, from <https://www.fs.usda.gov/recarea/bighorn/recarea/?recid=80618>
- USFS. (n.d.-d). *Bighorn National Forest—Forest Products Permits*. Retrieved July 7, 2020, from <https://www.fs.usda.gov/main/bighorn/passes-permits/forestproducts>
- USFS. (n.d.-e). *Bighorn National Forest—Home*. Retrieved September 16, 2019, from <https://www.fs.usda.gov/bighorn/>
- USFS. (n.d.-f). *Bighorn National Forest—News & Events: Changes to Bighorn National Forest camping regulations*. Retrieved September 1, 2020, from <https://www.fs.usda.gov/detail/bighorn/news-events/?cid=FSEPRD778027>
- USFS. (n.d.-g). *Enforcement—What We Do—LEI | USDA Forest Service*. Retrieved November 24, 2020, from <https://www.fs.fed.us/lei/enforcement.php>
- USFS. (2001). *Bighorn National Forest Social Assessment*.
- USFS. (2018). *2018 Bighorn National Forest Visitor Use Report*. file:///C:/Users/BreeL/Downloads/2018_BNF-NVUM-Report.pdf
- USFS. (2019). *2019 Rocky Mountain Region Aerial Survey*. <https://usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=120e0def66e74424a67628beab7464b9#>
- USFWS. (n.d.-a). *Endangered Species | Laws & Policies | Endangered Species Act*. Retrieved April 24, 2020, from <https://www.fws.gov/endangered/laws-policies/>



- USFWS. (n.d.-b). *Refuge List by State*. Retrieved March 19, 2019, from <https://www.fws.gov/refuges/profiles/ByState.cfm?state=WY>
- USFWS. (n.d.-c). *USFWS-WSFR State Wildlife Grant Program*. Retrieved March 12, 2019, from <https://wsfrprograms.fws.gov/subpages/grantprograms/swg/swg.htm>
- USFWS. (1973). *Endangered Species Act of 1973*. <https://www.fws.gov/laws/lawsdigest/esact.html>
- USFWS. (2018a). *2018 Annual Report of Lands Data Tables*.
- USFWS. (2018b, March 16). *Endangered Species | What We Do | Listing and Critical Habitat | Critical Habitat | FAQ*. <https://www.fws.gov/endangered/what-we-do/critical-habitats-faq.html>
- USFWS. (2018c, March 22). *About: Mission | National Wildlife Refuge System*. <https://www.fws.gov/refuges/about/mission.html>
- USGS. (n.d.). *The Yellowstone River Compact dividing the waters of the tributaries (Clarks Fork, Big Horn, Tongue and Powder) of the Yellows*. 1.
- USGS. (2012). *Energy Map of Southwestern Wyoming, Part A - Coal and Wind*. https://pubs.usgs.gov/ds/683/contents/DS683_pamphlet.pdf
- VELA Environmental, & City of Sheridan. (2015). *Upper Big Goose Creek Watershed Management Plan*.
- WACD. (n.d.). *About WACD*. Retrieved September 26, 2019, from <http://www.conservewy.com/ABOUT.html>
- WDEQ. (n.d.-a). *Groundwater Pollution Control (GPC) Program | Wyoming Water Quality*. Retrieved December 16, 2019, from <http://deq.wyoming.gov/wqd/gpc/>
- WDEQ. (n.d.-b). *Recreation Designated Uses Web Map: ArcGIS Viewer*. Retrieved December 16, 2019, from <https://gis.deq.wyoming.gov/maps/recreation/>
- WDEQ. (n.d.-c). *Subdivision Review | Wyoming Water Quality*. Retrieved December 16, 2019, from <http://deq.wyoming.gov/wqd/subdivision-review/>
- WDEQ. (n.d.-d). *Surface Water Quality Standards*. Retrieved December 16, 2019, from <http://deq.wyoming.gov/wqd/surface-water-quality-standards-2/>
- WDEQ. (n.d.-e). *Water Quality Assessment | Water Quality*. Retrieved December 16, 2019, from <http://deq.wyoming.gov/wqd/water-quality-assessment/>
- WDEQ. (n.d.-f). *Why are Riparian Areas Important?* Retrieved December 19, 2019, from <http://deq.wyoming.gov/wqd/non-point-source/resources/why-are-riparian-areas-important/>
- WDEQ. (2013). *Wyoming Surface Water Classification List*.
- WDEQ. (2018a). *Water Quality Rules and Regulations Chapter 1: Wyoming Surface Water Quality Standards*.
- WDEQ. (2018b). *Wyoming Department of Environmental Quality Air Quality Division Standards and Regulations- Chapter 2: Ambient Standards*. WY Department of Environmental Quality.
- WDEQ, & WQD. (2018). *Wyoming's Final 2016/2018 Integrated 305(b) and 303(d) Report* (p. 229).
- Weed Science Society of America. (2016). *WSSA Fact Sheet*. <http://wssa.net/wp-content/uploads/WSSA-Weed-Science-Definitions.pdf>



- WGFD. (2020). *Wyoming Game and Fish Department—Corridor Maps and Data*. <https://wgfd.wyo.gov/wildlife-in-wyoming/migration/corridor-maps-and-data>
- WGFD. (n.d.-a). *Wyoming Game and Fish Department—About the Department*. Retrieved March 27, 2019, from <https://wgfd.wyo.gov/About-Us/About-the-Department>
- WGFD. (n.d.-b). *Wyoming Game and Fish Department—Game and Fish Commission*. Retrieved March 27, 2019, from <https://wgfd.wyo.gov/about-us/game-and-fish-commission>
- WGFD. (n.d.-c). *Wyoming Game and Fish Department—Riparian Information*. Retrieved December 19, 2019, from <https://wgfd.wyo.gov/Habitat/Habitat-Information/Riparian-Information>
- WGFD. (2017a). *Species of Greatest Conservation Need: Wyoming State Wildlife Action Plan*. <https://wgfd.wyo.gov/WGFD/media/content/PDF/Habitat/SWAP/SGCN-Introduction.pdf>
- WGFD. (2017b). *Wyoming State Wildlife Action Plan*. <https://drive.google.com/open?id=0B1iN5AyJdrYPa2JMMjh6Q2RseVE>
- WGFD. (2020a). *Wyoming Game and Fish Department—WHMA*. <https://wgfd.wyo.gov/Public-Access/WHMA>
- WGFD. (2020b). *Wyoming Chronic Wasting Disease Management Plan*. <https://wgfd.wyo.gov/WGFD/media/content/PDF/Get%20Involved/CWD/Final-WGFD-CWD-Management-Plan-7-2020-with-appendices.pdf>
- Exec. Order No. 13783- Promoting Energy Independence and Economic Growth, Pub. L. No. Exec. Order No. 13783, 3C.F.R., 16093 (2017). <https://www.federalregister.gov/documents/2017/03/31/2017-06576/promoting-energy-independence-and-economic-growth>
- Wilson, R. K. (2014). *America's Public Lands: From Yellowstone to Smokey Bear and Beyond*. Rowman & Littlefield.
- WOGCC. (n.d.-a). *Oil Graph*. Retrieved February 7, 2019, from <http://pipeline.wyo.gov/StateOilGraph.cfm?oops=ID42052>
- WOGCC. (n.d.-b). *State Gas Production Graph*. Retrieved February 7, 2019, from <http://pipeline.wyo.gov/StateGasGraph.cfm?oops=ID42052>
- WOGCC. (2020). *Permits To Drill Within 019 County*. <http://pipeline.wyo.gov/countsum.cfm?cC=019&tMAX=2000000&tMin=1800000&RequestTimeOut=6500>
- WPLI. (n.d.-a). *Gardner_Mountain_WSA_Recommendations.pdf*. Retrieved July 6, 2020, from http://www.wyo-wcca.org/~wcca/files/3615/1847/1476/Gardner_Mountain_WSA_Recommendations.pdf
- WPLI. (n.d.-b). *NF_WSA_Recommendation.pdf*. Retrieved July 6, 2020, from http://www.wyo-wcca.org/~wcca/files/5315/1847/1476/NF_WSA_Recommendation.pdf
- WPLI. (2015). *Wyoming Public Lands Initiative*. <https://wcca.wygisc.org/wpli/homepage/index.html>
- WWDC. (n.d.). *Wyoming Water Development Commission Dam and Reservoir Planning*. Retrieved December 19, 2019, from http://wwdc.state.wy.us/dam_reservoir/dam_reservoir.html
- WYDEQ. (n.d.). *WYPDES | Water Quality*. Retrieved July 7, 2020, from <http://deq.wyoming.gov/wqd/wypdes/>



- Wyoming Air Quality Monitoring Network. (2020). *Johnson County—Wyoming Air Quality Monitoring Network—Wyoming Air Quality Monitoring Network*. <http://www.wyvisnet.com/Sites/Site.aspx?site=JOCO1>
- Wyoming Office of Homeland Security. (n.d.). *Wyoming State Mitigation Plan 2016-2021*. Google Docs. Retrieved December 16, 2019, from https://drive.google.com/file/d/1zuwfOHq_sVsUWzA8c14n_YYV3cuxAoYv/view?usp=embed_facebook
- Wyoming SHPO. (n.d.). *Criteria for National Register*. Retrieved April 24, 2020, from <https://wyoshpo.wyo.gov/index.php/programs/national-register/criteria-for-national-register>
- Wyoming State Forestry, K. (2020). *Forested Acres in Johnson County* [Personal communication].
- Wyoming State Historic Site, National Landmark Interpretive Center. (n.d.). *Fort Phil Kearny area attractions, Wyoming, Bighorn Mountains*. Fortphilkearny-Wy. Retrieved April 21, 2020, from <https://www.fortphilkearny.com/area-attractions>
- Wyoming Water Development Office. (2019). *Wyoming Water Development Commission 2019 Wyoming Irrigation Systems Report*. <http://wwdc.state.wy.us/irrsys/2019/raterept.html>
- Wyoming Weed and Pest Council. (n.d.). *Management Programs – Wyoming Weed & Pest*. Retrieved March 21, 2019, from <https://wyoweed.org/noxious-species/management-programs/>



APPENDIX A: TABLES

Table 5: Wyoming Tier 1 Species of Conservation Priority. (WGFD, 2017b)

Species	Common Name	Priority Tier
Amphibians		
<i>Anaxyrus baxteri</i>	Wyoming toad	I
<i>Anaxyrus boreas</i>	western toad	I
Birds		
<i>Accipiter gentilis</i>	Northern Goshawk	I
<i>Athene cunicularia</i>	Burrowing Owl	I
<i>Charadrius montanus</i>	Mountain Plover	I
<i>Gavia immer</i>	Common Loon	I
Fish		
<i>Catostomus discobolus</i>	bluehead sucker	I
<i>Catostomus latipinnis</i>	flannelmouth sucker	I
<i>Gila robusta</i>	roundtail chub	I
<i>Nocomis biguttatus</i>	hornyhead chub	I
<i>Rhinichthys osculus thermalis</i>	Kendall Warm Springs dace	I
Mammals		
<i>Lynx canadensis</i>	Canada lynx	I
<i>Mustela nigripes</i>	black-footed ferret	I
<i>Thomomys clusius</i>	Wyoming pocket gopher	I
Reptiles		
<i>Crotalus oreganus concolor</i>	midget faded rattlesnake	I
Mollusks		
<i>Lampsilis cardium</i>	plain pocketbook	I
<i>Fluminicola coloradoensis</i>	Green River pebblesnail	I
	mountainsnails (many species)	I



Table 6: Wyoming Tier 2 Species of Conservation Priority. (WGFD, 2017b)

Species	Common Name	Priority Tier
Amphibians		
<i>Anaxyrus cognatus</i>	Great Plains toad	II
<i>Lithobates pipiens</i>	northern leopard frog	II
<i>Lithobates sylvaticus</i>	wood frog	II
<i>Rana luteiventris</i>	Columbia spotted frog	II
<i>Spea bombifrons</i>	plains spadefoot	II
<i>Spea intermontana</i>	Great Basin spadefoot	II
Birds		
<i>Aechmophorus clarkii</i>	Clark’s Grebe	II
<i>Aechmophorus occidentalis</i>	Western Grebe	II
<i>Aegolius funereus</i>	Boreal Owl	II
<i>Ammodramus bairdii</i>	Baird’s Sparrow	II
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	II
<i>Aphelocoma woodhouseii</i>	Woodhouse’s Scrub-jay	II
<i>Aquila chrysaetos</i>	Golden Eagle	II
<i>Archilochus alexandri</i>	Black-chinned Hummingbird	II
<i>Ardea herodias</i>	Great Blue Heron	II
<i>Artemisiospiza nevadensis</i>	Sagebrush Sparrow	II
<i>Asio flammeus</i>	Short-eared Owl	II
<i>Baeolophus ridgwayi</i>	Juniper Titmouse	II
<i>Bartramia longicauda</i>	Upland Sandpiper	II
<i>Botaurus lentiginosus</i>	American Bittern	II
<i>Bubulcus ibis</i>	Cattle Egret	II
<i>Buteo regalis</i>	Ferruginous Hawk	II
<i>Buteo swainsoni</i>	Swainson’s Hawk	II
<i>Calcarius ornatus</i>	Chestnut-collared Longspur	II
<i>Centrocercus urophasianus</i>	Greater Sage Grouse	II
<i>Chlidonias niger</i>	Black Tern	II
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	II
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	II
<i>Cygnus buccinator</i>	Trumpeter Swan	II
<i>Dolichonyx oryzivorus</i>	Bobolink	II
<i>Egretta thula</i>	Snowy Egret	II
<i>Falco peregrinus</i>	Peregrine Falcon	II
<i>Geothlypis tolmiei</i>	MacGillivray’s Warbler	II
<i>Glaucidium gnoma</i>	Northern Pygmy Owl	II
<i>Haliaeetus leucocephalus</i>	Bald Eagle	II



<i>Histrionicus histrionicus</i>	Harlequin Duck	II
<i>Hydroprogne caspia</i>	Caspian Tern	II
<i>Icterus parisorum</i>	Scott's Oriole	II
<i>Lanius ludovicianus</i>	Loggerhead Shrike	II
<i>Leucophaeus pipixcan</i>	Franklin's Gull	II
<i>Leucosticte atrata</i>	Black Rosy-finch	II
<i>Leucosticte australis</i>	Brown-capped Rosy-finch	II
<i>Loxia curvirostra</i>	Red Crossbill	II
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	II
<i>Melanerpes lewis</i>	Lewis's Woodpecker	II
<i>Myiarchus cinerascens</i>	Ash-throated Flycatcher	II
<i>Nucifraga columbiana</i>	Clark's Nutcracker	II
<i>Numenius americanus</i>	Long-billed Curlew	II
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	II
<i>Oreoscoptes montanus</i>	Sage Thrasher	II
<i>Oreothlypis virginiae</i>	Virginia's Warbler	II
<i>Pelecanus erythrorhynchos</i>	American White Pelican	II
<i>Picoides arcticus</i>	Black-backed Woodpecker	II
<i>Plegadis chihi</i>	White-faced Ibis	II
<i>Psaltriparus minimus</i>	Bushtit	II
<i>Rhynchophanes mccownii</i>	McCown's Longspur	II
<i>Selasphorus calliope</i>	Calliope Hummingbird	II
<i>Selasphorus rufus</i>	Rufous Hummingbird	II
<i>Setophaga nigrescens</i>	Black-throated Gray Warbler	II
<i>Sitta pygmaea</i>	Pygmy Nuthatch	II
<i>Sphyrapicus thyroideus</i>	Williamson's Sapsucker	II
<i>Spiza americana</i>	Dickcissel	II
<i>Spizella breweri</i>	Brewer's Sparrow	II
<i>Sterna forsteri</i>	Forster's Tern	II
<i>Strix nebulosa</i>	Great Gray Owl	II
<i>Tympanuchus phasianellus columbianus</i>	Columbian Sharp-tailed Grouse	II
<i>Vireo olivaceus</i>	Red-eyed Vireo	II
<i>Vireo vicinior</i>	Gray Vireo	II
Fish		
<i>Chrosomus neogaeus</i>	finescale dace	II
<i>Etheostoma exile</i>	Iowa darter	II
<i>Etheostoma spectabile</i>	orangethroat darter	II
<i>Fundulus kansae</i>	Northern Plains killifish	II
<i>Fundulus sciadicus</i>	plains topminnow	II



<i>Hiodon alosoides</i>	goldeye	II
<i>Hybognathus argyritis</i>	western silvery minnow	II
<i>Hybognathus placitus</i>	plains minnow	II
<i>Lepidomeda copei</i>	northern leatherside chub	II
<i>Lota lota</i>	burbot	II
<i>Macrhybopsis gelida</i>	sturgeon chub	II
<i>Margariscus nachtriebi</i>	northern pearl dace	II
<i>Oncorhynchus clarkii bouvieri</i>	Yellowstone cutthroat trout	II
<i>Oncorhynchus clarkii pleuriticus</i>	Colorado River cutthroat trout	II
<i>Oncorhynchus clarkii spp.</i>	Snake River cutthroat trout	II
<i>Oncorhynchus clarkii utah</i>	Bonneville cutthroat trout	II
<i>Phenacobius mirabilis</i>	suckermouth minnow	II
<i>Sander canadensis</i>	sauger	II
<i>Scaphirhynchus platyrhynchus</i>	shovelnose sturgeon	II
Mammals		
<i>Alces americanus</i>	moose	II
<i>Antrozous pallidus</i>	pallid bat	II
<i>Brachylagus idahoensis</i>	pygmy rabbit	II
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	II
<i>Cynomys leucurus</i>	white-tailed prairie dog	II
<i>Cynomys ludovicianus</i>	black-tailed prairie dog	II
<i>Geomys lutescens</i>	Sand Hills pocket gopher	II
<i>Glaucomys sabrinus</i>	northern flying squirrel	II
<i>Gulo gulo</i>	wolverine	II
<i>Lemmyscus curtatus</i>	sagebrush vole	II
<i>Lontra canadensis</i>	northern river otter	II
<i>Microtus richardsoni</i>	water vole	II
<i>Myotis ciliolabrum</i>	western small-footed myotis	II
<i>Myotis lucifugus</i>	little brown myotis	II
<i>Myotis septentrionalis</i>	northern long-eared myotis	II
<i>Myotis thysanodes</i>	fringed myotis	II
<i>Ochotona princeps</i>	American pika	II
<i>Ovis canadensis</i>	bighorn sheep	II
<i>Peromyscus crinitus</i>	canyon deer mouse	II
<i>Peromyscus truei</i>	piñon deer mouse	II
<i>Reithrodontomys montanus</i>	plains harvest mouse	II
<i>Sorex nanus</i>	dwarf shrew	II
<i>Spilogale putorius</i>	eastern spotted skunk	II
<i>Tamias dorsalis</i>	cliff chipmunk	II



<i>Thomomys idahoensis</i>	Idaho pocket gopher	II
<i>Vulpes velox</i>	swift fox	II
<i>Zapus hudsonius preblei</i>	Preble's meadow jumping mouse	II
Reptiles		
<i>Apalone spinifera spinifera</i>	eastern spiny softshell	II
<i>Charina bottae</i>	northern rubber boa	II
<i>Lampropeltis triangulum multistriata</i>	pale milksnake	II
<i>Pituophis catenifer deserticola</i>	Great Basin gophersnake	II
<i>Urosaurus ornatus wrighti</i>	northern tree lizard	II
Crustaceans		
<i>Branchinecta constricta</i>	constricted fairy shrimp	II
<i>Orconectes neglectus</i>	ringed crayfish	II
<i>Pacifastacus gambelii</i>	pilose crayfish	II
<i>Streptocephalus mackini</i>	Mackin fairy shrimp	II
Mollusks		
<i>Anodonta californiensis</i>	California floater	II
<i>Anodontoides ferussacianus</i>	cylindrical papershell	II
<i>Oreohelix pygmaea</i>	pygmy mountainsnail	II
<i>Oreohelix strigosa cooperi</i>	Cooper's rocky mountainsnail	II
<i>Oreohelix yavapai</i>	yavapai mountainsnail	II
<i>Physa spelunca</i>	cave physa	II
<i>Pyrgulopsis robusta</i>	Jackson Lake springsnail	II
	aquatic snails (many species)	II
	land snails (many species)	II



Table 7: Wyoming Tier 3 Species of Conservation Priority. (WGFD, 2017b)

Species	Common Name	Priority Tier
Amphibians		
<i>Ambystoma mavortium</i>	western tiger salamander	III
Birds		
<i>Anthus rubescens</i>	American Pipit	III
<i>Catherpes mexicanus</i>	Canyon Wren	III
<i>Charadrius nivosus</i>	Snowy Plover	III
<i>Chordeiles minor</i>	Common Nighthawk	III
<i>Empidonax traillii</i>	Willow Flycatcher	III
<i>Falco columbarius</i>	Merlin	III
<i>Falco sparverius</i>	American Kestrel	III
<i>Geothlypis trichas</i>	Common Yellowthroat	III
<i>Passerina caerulea</i>	Blue Grosbeak	III
<i>Polioptila caerulea</i>	Blue-gray Gnatcatcher	III
<i>Progne subis</i>	Purple Martin	III
<i>Psiloscoops flammeolus</i>	Flammulated Owl	III
<i>Rallus limicola</i>	Virginia Rail	III
<i>Thryomanes bewickii</i>	Bewick’s Wren	III
Fish		
<i>Hybognathus hankinsoni</i>	brassy minnow	III
<i>Luxilus cornutus</i>	common shiner	III
<i>Notropis dorsalis</i>	bigmouth shiner	III
<i>Platygobio gracilis</i>	flathead chub	III
Mammals		
<i>Bassariscus astutus</i>	ringtail	III
<i>Chaetodipus hispidus</i>	hispid pocket mouse	III
<i>Euderma maculatum</i>	spotted bat	III
<i>Lasiurus borealis</i>	eastern red bat	III
<i>Mustela nivalis</i>	least weasel	III
<i>Myotis evotis</i>	long-eared myotis	III
<i>Myotis volans</i>	long-legged myotis	III
<i>Myotis yumanensis</i>	yuma myotis	III
<i>Perognathus fasciatus</i>	olive-backed pocket mouse	III
<i>Perognathus flavescens</i>	plains pocket mouse	III
<i>Perognathus flavus</i>	silky pocket mouse	III
<i>Perognathus mollipilosus</i>	Great Basin pocket mouse	III
<i>Sciurus aberti</i>	Abert’s squirrel	III
<i>Sorex haydeni</i>	Hayden’s shrew	III



<i>Sorex hoyi</i>	American pygmy shrew	III
<i>Sorex preblei</i>	Preble's shrew	III
<i>Spilogale gracilis</i>	western spotted skunk	III
<i>Tamias amoenus</i>	yellow-pine chipmunk	III
<i>Tamias umbrinus</i>	Uinta chipmunk	III
<i>Xerospermophilus spilosoma</i>	spotted ground squirrel	III
<i>Zapus hudsonius</i>	meadow jumping mouse	III
Crustaceans		
<i>Cambarus diogenes</i>	devil crayfish	III
<i>Orconectes immunis</i>	calico/papershell crayfish	III
<i>Thamnocephalus platyurus</i>	beavertail fairy shrimp	III
	fairy, tadpole, and clam shrimp (many species)	III
Mollusks		
<i>Gyraulus parvus</i>	ash gyro	III
<i>Ferrissia rivularis</i>	creeping ancyliid	III
<i>Fossaria dalli</i>	dusky fossaria	III
<i>Discus whitneyi</i>	forest disc	III
<i>Pyganodon grandis</i>	giant floater	III
<i>Planorbella trivolvis</i>	marsh rams-horn	III
<i>Vallonia gracilicosta</i>	multirib vallonia	III
<i>Physa acuta</i>	pewter physa	III
	pill or fingernail clams (many species)	III
<i>Fossaria bulimoides</i>	prairie fossaria	III
<i>Zonitoides arboreus</i>	quick gloss	III
<i>Oreohelix strigosa</i>	Rocky Mountain mountainsnail	III
	stagnicola pond snails (many species)	III
<i>Oreohelix subrudis</i>	subalpine mountainsnail	III
<i>Physa gyrina</i>	tadpole physa	III
<i>Promenetus umbilicatellus</i>	umbilicate sprite	III
<i>Vitrina pellucida</i>	western glass-snail	III



Table 8: BLM's Sensitive Species List for Wyoming. (BLM, 2010)

Species	Common Name
Amphibians	
<i>Bufo boreas boreas</i>	Boreal Toad (Northern Rocky Mountain Population)
<i>Rana pipiens</i>	Northern Leopard Frog
<i>Rana luteiventris</i>	Columbia Spotted Frog
<i>Spea intermontana</i>	Great Basin Spadefoot
Birds	
<i>Accipiter gentilis</i>	Northern Goshawk
<i>Ammodramus bairdii</i>	Baird's Sparrow
<i>Amphispiza belli</i>	Sage Sparrow
<i>Athene cunicularia</i>	Burrowing Owl
<i>Buteo regalis</i>	Ferruginous Hawk
<i>Centrocercus urophasianus</i>	Greater Sage-grouse
<i>Charadrius montanus</i>	Mountain Plover
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo
<i>Cygnus buccinator</i>	Trumpeter Swan
<i>Falco peregrinus</i>	Peregrine Falcon
<i>Haliaeetus leucocephalus</i>	Bald Eagle
<i>Lanius ludovicianus</i>	Loggerhead Shrike
<i>Numenius americanus</i>	Long-billed Curlew
<i>Oreoscoptes montanus</i>	Sage Thrasher
<i>Plegadis chichi</i>	White-faced Ibis
<i>Spizella breweri</i>	Brewer's Sparrow
<i>Tympanuchus phasianellus columbianus</i>	Columbian Sharp-tailed Grouse
Fish	
<i>Catostomus discobolus</i>	Bluehead Sucker
<i>Catostomus latipinnis</i>	Flannelmouth Sucker
<i>Lepidomeda copei</i>	Northern Leatherside Chub
<i>Gila robusta</i>	Roundtail Chub
<i>Oncorhynchus clarkii bouvieri</i>	Yellowstone Cutthroat Trout
<i>Oncorhynchus clarkii ssp. (O. c. behnkei)</i>	Fine-spotted Snake River Cutthroat Trout
<i>Oncorhynchus clarkii pleuriticus</i>	Colorado River Cutthroat Trout
<i>Oncorhynchus clarkii Utah</i>	Bonneville Cutthroat Trout
<i>Nocomis biguttatus</i>	Hornyhead Chub
Mammals	
<i>Brachylagus idahoensis</i>	Pygmy Rabbit
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat
<i>Cynomys leucurus</i>	White-tailed Prairie Dog
<i>Cynomys ludovicianus</i>	Black-tailed Prairie Dog



<i>Euderma maculatum</i>	Spotted Bat
<i>Myotis evotis</i>	Long-eared Myotis
<i>Myotis thysanodes</i>	Fringed Myotis
<i>Thomomys clusius</i>	Wyoming Pocket Gopher
<i>Thomomys idahoensis</i>	Idaho Pocket Gopher
<i>Vulpes velox</i>	Swift Fox
<i>Zapus hudsonius preblei</i>	Preble's Meadow Jumping Mouse
Reptiles	
<i>Crotalus viridis concolor</i>	Midget Faded Rattlesnake
Plants	
<i>Antennaria arcuata</i>	Meadow Pussytoes
<i>Aquilegia laramiensis</i>	Laramie Columbine
<i>Artemisia porteri</i>	Porter's Sagebrush
<i>Astragalus diversifolius</i>	Meadow Milkvetch
<i>Astragalus gilviflorus var. purpureus</i>	Dubois Milkvetch
<i>Astragalus jejunus var. articulatus</i>	Hyattville Milkvetch
<i>Astragalus proimanthus</i>	Precocious Milkvetch
<i>Astragalus racemosus var. treleasei</i>	Trelease's Milkvetch
<i>Boechera (Arabis) pusilla</i>	Small Rock Cress
<i>Botrychium lineare</i>	Slender Moonwort
<i>Cirsium aridum</i>	Cedar Rim Thistle
<i>Cirsium ownbeyi</i>	Ownbey's Thistle
<i>Cleome multicaulis</i>	Many-stemmed Spider-flower
<i>Cryptantha subcapitata</i>	Owl Creek Miner's Candle
<i>Cymopterus evertii</i>	Evert's Wafer-Parsnip
<i>Cymopterus williamsii</i>	Williams' Wafer-Parsnip
<i>Descurainia torulosa</i>	Wyoming Tansymustard
<i>Elymus simplex var. luxurians</i>	Dune Wildrye
<i>Ericameria discoidea var. winwardii</i>	Winward's narrow leaf goldenweed
<i>Lepidium integrifolium var. integrifolium</i>	Entire-Leaved Peppergrass
<i>Lesquerella arenosa var. argillosa</i>	Sidesaddle Bladderpod
<i>Lesquerella fremontii</i>	Fremont Bladderpod
<i>Lesquerella macrocarpa</i>	Large-fruited Bladderpod
<i>Lesquerella prostrata</i>	Prostrate Bladderpod
<i>Penstemon absarokensis</i>	Absaroka Beardtongue
<i>Penstemon acaulis var. acaulis</i>	Stemless Beardtongue
<i>Penstemon gibbensii</i>	Gibbens' Beardtongue
<i>Phlox pungens</i>	Beaver Rim Phlox
<i>Physaria condensata</i>	Tufted Twinpod
<i>Physaria dornii</i>	Dorn's Twinpod



<i>Physaria saximontana</i> var. <i>saximontana</i>	Rocky Mountain Twinpod
<i>Pinus albicaulis</i>	Whitebark Pine
<i>Pinus flexilis</i>	Limber Pine
<i>Rorippa calycina</i>	Persistent Sepal Yellowcress
<i>Shoshonea pulvinata</i>	Shoshonea
<i>Sphaeromeria simplex</i>	Laramie False Sagebrush
<i>Thelesperma caespitosum</i>	Green River Greenthread
<i>Thelesperma pubescens</i>	Uinta Greenthread
<i>Townsendia microcephala</i>	Cedar Mtn. Easter Daisy
<i>Trifolium barnebyi</i>	Barneby's Clover

Table 9: Management Indicator Species/Focal Species for the Bighorn National Forest. (U.S. Forest Service, 2010)

Species	Common Name
Birds	
<i>Sitta canadensis</i>	Red-breasted nuthatch
<i>Spizella breweri</i>	Brewer's sparrow
<i>Accipiter gentilis</i>	Northern goshawk
Fish	
<i>Oncorhynchus mykiss</i>	Rainbow trout
Mammals	
<i>Castor canadensis</i>	Beaver
<i>Cervus elaphus nelsoni</i>	Rocky Mountain elk
<i>Tamiasciurus hudsonicus</i>	Red squirrel



Table 10: Threatened, Endangered, Proposed, Candidate and Forest Service Region 2 Sensitive Species for the Bighorn National Forest. (U.S. Forest Service, 2010)

Species	Common Name	Status
Amphibians		
<i>Lithobates pipiens</i>	Northern leopard frog	R2 Sensitive Species
<i>Lithobates luteiventris</i>	Columbia spotted frog	R2 Sensitive Species
<i>Lithobates sylvatica</i>	Wood frog	R2 Sensitive Species
Birds		
<i>Histrionicus histrionicus</i>	Harlequin duck	R2 Sensitive Species
<i>Haliaeetus leucocephalus</i>	Bald eagle	Delisted
<i>Circus cyaneus</i>	Northern harrier	R2 Sensitive Species
<i>Accipiter gentilis</i>	Northern goshawk	R2 Sensitive Species
<i>Falco peregrinus anatum</i>	Peregrine falcon	Delisted
<i>Centrocercus urophasianus</i>	Greater sage grouse	R2 Sensitive Species
<i>Otus flammeolus</i>	Flammulated owl	R2 Sensitive Species
<i>Asio flammeus</i>	Short-eared owl	R2 Sensitive Species
<i>Aegolius funereus</i>	Boreal owl	R2 Sensitive Species
<i>Melanerpes lewis</i>	Lewis' woodpecker	R2 Sensitive Species
<i>Picoides tridactylus</i>	Three-toed woodpecker	R2 Sensitive Species
<i>Contopus cooperi</i>	Olive-sided flycatcher	R2 Sensitive Species
<i>Lanius ludovicianus</i>	Loggerhead shrike	R2 Sensitive Species
<i>Spizella breweri</i>	Brewer's sparrow	R2 Sensitive Species
<i>Amphispiza bellii</i>	Sage sparrow	R2 Sensitive Species
<i>Ammodramus savannarum</i>	Grasshopper sparrow	R2 Sensitive Species
Fish		
<i>Oncorhynchus clarki bouvieri</i>	Yellowstone cutthroat trout	R2 Sensitive Species
<i>Catostomus platyrhynchus</i>	Mountain sucker	R2 Sensitive Species
Mammals		
<i>Myotis thysanodes</i>	Fringed myotis	R2 Sensitive Species
<i>Euderma maculatum</i>	Spotted bat	R2 Sensitive Species
<i>Plecotus townsendii</i>	Townsend's big-eared bat	R2 Sensitive Species
<i>Microtus richardsoni</i>	Water vole	R2 Sensitive Species
<i>Martes americana</i>	American marten	R2 Sensitive Species
<i>Gulo gulo</i>	Wolverine	Proposed
<i>Lynx canadensis</i>	Canada lynx	Threatened
<i>Ovis canadensis canadensis</i>	Rocky Mountain bighorn sheep	R2 Sensitive Species
Molluscs		
<i>Oreohelix pygmaea</i>	Pygmy mountainsnail	R2 Sensitive Species
<i>Oreohelix strigosa cooperi</i>	Cooper's Rocky Mountainsnail	R2 Sensitive Species



Plants		
<i>Botrychium paradoxum</i> New taxon	Peculiar moonwort	R2 Sensitive Species
<i>Botrychium ascendens</i>	Upward-lobe moonwort	R2 Sensitive Species
<i>Cypripedium montanum</i>	Mountain lady's slipper	R2 Sensitive Species
<i>Cypripedium parviflorum</i>	Yellow lady's slipper	R2 Sensitive Species
<i>Eriophorum chamissonis</i>	Russet cotton-grass	R2 Sensitive Species
<i>Festuca hallii</i>	Hall's fescue	R2 Sensitive Species
<i>Parnassia kotzebuei</i>	Grass-of-parnassus	R2 Sensitive Species
<i>Penstemon caryi</i>	Cary beardtongue	R2 Sensitive Species
<i>Physaria didymocarpa</i> var. <i>Lanata</i>	Wooly twinpod	R2 Sensitive Species
<i>Pyrrocoma clementis</i> var. <i>villosa</i>	Hairy tranquil golden-weed	R2 Sensitive Species
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Northern blackberry	R2 Sensitive Species
<i>Utricularia minor</i>	Lesser bladderpod	R2 Sensitive Species



Table 11: Regional Forester’s Sensitive Animal Species List for the Rocky Mountain Region. (U.S. Forest Service, 2017)

Species	Common Name
Amphibians	
<i>Anaxyrus boreas boreas</i>	boreal toad
<i>Lithobates blairi</i>	plains leopard frog
<i>Lithobates pipiens</i>	northern leopard frog
<i>Lithobates sylvaticus</i>	wood frog
<i>Rana luteiventris</i>	Columbia spotted frog
Birds	
<i>Accipiter gentilis</i>	Northern Goshawk
<i>Aegolius funereus</i>	Boreal Owl
<i>Ammodramus savannarum</i>	Grasshopper Sparrow
<i>Artemisiospiza nevadensis</i>	Sagebrush Sparrow
<i>Asio flammeus</i>	Short-eared Owl
<i>Athene cunicularia</i>	Burrowing Owl
<i>Botaurus lentiginosus</i>	American Bittern
<i>Buteo regalis</i>	Ferruginous Hawk
<i>Calcarius ornatus</i>	Chestnut-collared Longspur
<i>Centrocercus urophasianus</i>	Greater Sage-Grouse
<i>Charadrius montanus</i>	Mountain Plover
<i>Chlidonias niger</i>	Black Tern
<i>Circus cyaneus</i>	Northern Harrier
<i>Contopus cooperi</i>	Olive-sided Flycatcher
<i>Cygnus buccinator</i>	Trumpeter Swan
<i>Cypseloides niger</i>	Black Swift
<i>Falco peregrinus anatum</i>	Peregrine Falcon
<i>Haliaeetus leucocephalus</i>	Bald Eagle
<i>Histrionicus histrionicus</i>	Harlequin Duck
<i>Lagopus leucura</i>	White-tailed Ptarmigan
<i>Lanius ludovicianus</i>	Loggerhead Shrike
<i>Melanerpes lewis</i>	Lewis's Woodpecker
<i>Numenius americanus</i>	Long-billed Curlew
<i>Peucaea cassinii</i>	Cassin's Sparrow
<i>Picoides arcticus</i>	Black-backed Woodpecker
<i>Progne subis</i>	Purple Martin
<i>Psiloscops flammeolus</i>	Flammulated Owl
<i>Rhynchophanes mccownii</i>	McCown's Longspur
<i>Spizella breweri</i>	Brewer's Sparrow
<i>Tympanuchus cupido</i>	Greater Prairie-Chicken
<i>Tympanuchus phasianellus columbianus</i>	Columbian Sharp-tailed Grouse



Fish	
<i>Catostomus discobolus</i>	bluehead sucker
<i>Catostomus latipinnis</i>	flannelmouth sucker
<i>Catostomus platyrhynchus</i>	mountain sucker
<i>Catostomus plebeius</i>	Rio Grande sucker
<i>Chrosomus eos</i>	northern redbelly dace
<i>Chrosomus erythrogaster</i>	southern redbelly dace
<i>Chrosomus neogaeus</i>	finescale dace
<i>Couesius plumbeus</i>	lake chub
<i>Fundulus sciadicus</i>	Plains topminnow
<i>Gila pandora</i>	Rio Grande chub
<i>Gila robusta</i>	roundtail chub
<i>Hybognathus placitus</i>	plains minnow
<i>Macrhybopsis gelida</i>	sturgeon chub
<i>Margariscus nachtriebi</i>	northern pearl dace
<i>Nocomis biguttatus</i>	hornyhead chub
<i>Oncorhynchus clarkii bouvieri</i>	Yellowstone cutthroat
<i>Oncorhynchus clarkii pleuriticus</i>	Colorado River cutthroat
<i>Oncorhynchus clarkii virginalis</i>	Rio Grande cutthroat
<i>Platygobio gracilis</i>	flathead chub
Insects	
<i>Bombus occidentalis</i>	western bumble bee
<i>Capnia arapahoe</i>	Arapahoe snowfly
<i>Danaus plexippus plexippus</i>	monarch
<i>Hesperia ottoe</i>	Ottoe skipper
<i>Ochrotrichia susanae</i>	Susan's purse-making caddisfly
<i>Somatochlora hudsonica</i>	Hudsonian emerald
<i>Speyeria idalia</i>	regal fritillary
<i>Speyeria nokomis nokomis</i>	Nokomis fritillary, Great Basin silverspot
Mammals	
<i>Conepatus leuconotus</i>	American hog-nosed skunk
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat
<i>Cynomys gunnisoni</i>	Gunnison's prairie dog
<i>Cynomys leucurus</i>	white-tailed prairie dog
<i>Cynomys ludovicianus</i>	black-tailed prairie dog
<i>Euderma maculatum</i>	spotted bat
<i>Gulo gulo</i>	North American wolverine
<i>Lasiurus cinereus</i>	hoary bat
<i>Lontra canadensis</i>	river otter
<i>Martes americana</i>	American marten
<i>Microtus richardsoni</i>	water vole



<i>Myotis thysanodes</i>	fringed myotis
<i>Ovis canadensis canadensis</i>	Rocky Mountain bighorn sheep
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep
<i>Sorex hoyi</i>	pygmy shrew
<i>Thomomys clusius</i>	Wyoming pocket gopher
<i>Vulpes macrotis</i>	kit fox
<i>Vulpes velox</i>	swift fox
Molluscs	
<i>Acroloxus coloradensis</i>	Rocky Mountain capshell
<i>Oreohelix pygmaea</i>	pygmy mountainsnail
<i>Oreohelix strigosa cooperi</i>	Cooper's Rocky Mountainsnail
Reptiles	
<i>Sistrurus catenatus edwardsii</i>	desert massasauga
<i>Storeria occipitomaculata pahasapae</i>	Black Hills redbelly snake



Table 12: Regional Forester’s Sensitive Plant Species List for the Rocky Mountain Region. (U.S. Forest Service, 2017)

Species	Common Name
Non-Vascular	
<i>Sphagnum angustifolium</i>	sphagnum
<i>Sphagnum balticum</i>	Baltic sphagnum
Ferns & Allies	
<i>Botrychium ascendens</i>	trianglelobe moonwort
<i>Botrychium campestre</i>	Iowa moonwort, prairie moonwort
<i>Botrychium paradoxum</i>	peculiar moonwort
<i>Lycopodium complanatum</i>	groundcedar
<i>Selaginella selaginoides</i>	club spikemoss
Angiosperms - Monocots	
<i>Calochortus flexuosus</i>	winding mariposa lily
<i>Carex alopecoidea</i>	foxtail sedge
<i>Carex diandra</i>	lesser paniced sedge
<i>Carex livida</i>	livid sedge
<i>Cypripedium montanum</i>	mountain lady's slipper
<i>Cypripedium parviflorum</i>	lesser yellow lady's slipper
<i>Eleocharis elliptica</i>	elliptic spikerush, slender spikerush
<i>Epipactis gigantea</i>	stream orchid, giant helleborine
<i>Eriophorum chamissonis</i>	Chamisso's cottongrass
<i>Eriophorum gracile</i>	slender cottongrass
<i>Festuca hallii</i>	plains rough fescue
<i>Galearis rotundifolia</i>	roundleaf orchid
<i>Kobresia simpliciuscula</i>	simple bog sedge
<i>Liparis loeselii</i>	yellow widelip orchid
<i>Malaxis monophyllos var. brachypoda</i>	white adder's-mouth orchid
<i>Platanthera orbiculata</i>	lesser roundleaved orchid
<i>Ptilagrostis porteri</i>	Porter's false needlegrass
<i>Schoenoplectus hallii</i>	Hall's bulrush
<i>Triteleia grandiflora</i>	largeflower triteleia
Angiosperms - Dicots	
<i>Aliciella sedifolia</i>	stonecrop gilia
<i>Aquilegia chrysantha</i>	Rydberg's golden columbine
<i>Aquilegia laramiensis</i>	Laramie columbine
<i>Armeria maritima ssp. sibirica</i>	Siberian sea thrift
<i>Asclepias uncialis</i>	wheel milkweed
<i>Astragalus barrii</i>	Barr's milkvetch
<i>Astragalus iodopetalus</i>	violet milkvetch
<i>Astragalus leptaleus</i>	park milkvetch



<i>Astragalus missouriensis</i> var. <i>humistratus</i>	Missouri milkvetch, Archuleta milkvetch
<i>Astragalus proximus</i>	Aztec milkvetch
<i>Astragalus ripleyi</i>	Ripley's milkvetch
<i>Braya glabella</i>	smooth northern-rockcress
<i>Chenopodium cycloides</i>	sandhill goosefoot
<i>Cuscuta plattensis</i>	prairie dodder, Wyoming dodder
<i>Descurainia torulosa</i>	mountain tansymustard
<i>Draba exunguiculata</i>	clawless draba
<i>Draba grayana</i>	Gray's draba
<i>Draba smithii</i>	Smith's draba
<i>Draba weberi</i>	Weber's draba, Weber's whitlowgrass
<i>Drosera anglica</i>	English sundew
<i>Drosera rotundifolia</i>	roundleaf sundew
<i>Eriogonum brandegeei</i>	Brandegee's buckwheat
<i>Eriogonum exilifolium</i>	dropleaf buckwheat
<i>Eriogonum visherii</i>	Visher's buckwheat, Dakota buckwheat
<i>Gutierrezia elegans</i>	Lone Mesa snakeweed
<i>Ipomopsis aggregata</i> ssp. <i>weberi</i>	scarlet gilia
<i>Lesquerella fremontii</i>	Fremont's bladderpod
<i>Lesquerella pruinosa</i>	Pagosa Springs bladderpod
<i>Mimulus gemmiparus</i>	Rocky Mountain monkeyflower, budding monkeyflower
<i>Neoparrya lithophila</i>	Bill's neoparrya
<i>Oreoxis humilis</i>	Pike's Peak alpineparsley
<i>Packera mancosana</i>	Mancos shale packera
<i>Parnassia kotzebuei</i>	Kotzebue's grass of Parnassus
<i>Penstemon absarokensis</i>	Absaroka Range beardtongue
<i>Penstemon caryi</i>	Cary's beardtongue
<i>Penstemon degeneri</i>	Degener's beardtongue
<i>Penstemon harringtonii</i>	Harrington's beardtongue
<i>Physaria didymocarpa</i> var. <i>lanata</i>	common twinpod
<i>Physaria pulvinata</i>	cushion bladderpod
<i>Physaria scrotiformis</i>	west silver bladderpod
<i>Potentilla rupincola</i>	rock cinquefoil, Rocky Mountain cinquefoil
<i>Primula egaliksensis</i>	Greenland primrose
<i>Pyrrocoma carthamoides</i> var. <i>subsquarrosa</i>	largeflower goldenweed
<i>Pyrrocoma clementis</i> var. <i>villosa</i>	tranquil goldenweed
<i>Pyrrocoma integrifolia</i>	many-stemmed goldenweed
<i>Ranunculus grayi</i>	ice cold buttercup
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	dwarf raspberry



<i>Salix arizonica</i>	Arizona willow
<i>Salix barrattiana</i>	Barratt's willow
<i>Salix candida</i>	sageleaf willow, sage willow
<i>Salix myrtilifolia</i>	blueberry willow
<i>Salix serissima</i>	autumn willow
<i>Sanguinaria canadensis</i>	bloodroot
<i>Shoshonea pulvinata</i>	Shoshone carrot
<i>Thalictrum heliophilum</i>	Cathedral Bluff meadow-rue
<i>Townsendia condensata var. anomala</i>	cushion Townsend daisy
<i>Utricularia minor</i>	lesser bladderwort
<i>Viburnum opulus var. americanum</i>	American cranberrybush, mooseberry
<i>Viola selkirkii</i>	Selkirk's violet
<i>Xanthisma coloradoense</i>	Colorado tansyaster
<i>Gymnosperms</i>	
<i>Pinus albicaulis</i>	whitebark pine



APPENDIX B: WEBSITE LINKS IN DOCUMENT

1. USFS Guidelines for Road Maintenance Levels
 - a. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3793545.pdf
2. Wyoming Public Lands Initiative
 - a. <https://wcca.wygisc.org/wpli/hub/index.html>
3. Wyoming County Wildfire Protection Plans
 - a. <https://wsfd.wyo.gov/fire-management/fuels-mitigation/county-wildfire-protection-plans>
4. Buffalo Municipal Watershed Wildfire Hazard Mitigation Assessment Project
 - a. <https://wwdc.state.wy.us/consultants/Buffalo-Wildfire-Project-Information.pdf>
5. 2019 Rocky Mountain Region Aerial Survey Results
 - a. <https://usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=120e0def66e74424a67628beab7464b9>
6. Wyoming Water Development Office Dam and Reservoir Planning
 - a. https://wwdc.state.wy.us/dam_reservoir/dam_reservoir.html
7. Wyoming Department of Environmental Equality Surface Water Quality Standards
 - a. <http://deq.wyoming.gov/wqd/surface-water-quality-standards-2/>
8. Wyoming Department of Environmental Equality Best Management Practices
 - a. <http://deq.wyoming.gov/wqd/non-point-source/resources/mgt-practices/>
9. FEMA National Flood Hazard Layer
 - a. <https://www.fema.gov/flood-maps/tools-resources/flood-map-products/national-flood-hazard-layer>
10. Wyoming State Wildlife Action Plan
 - a. <https://wgfd.wyo.gov/Habitat/Habitat-Plans/Wyoming-State-Wildlife-Action-Plan>
11. Environmental Conservation Online System
 - a. <https://ecos.fws.gov/ecp/>
12. Wildlife Habitat Management Areas
 - a. <https://wgfd.wyo.gov/Public-Access/WHMA>
13. Executive Order 2020-1 Wyoming Mule Deer and Antelope Migration Corridor Protection
 - a. <https://s3.us-east-1.wasabisys.com/localnews8.com/2020/02/Executive-Order-2020-01-1.pdf>
14. Wyoming Chronic Wasting Disease Management Plan
 - a. <https://wgfd.wyo.gov/WGFD/media/content/PDF/Get%20Involved/CWD/Final-WGFD-CWD-Management-Plan-7-2020-with-appendices.pdf>
15. Executive Order 2019-3 Greater Sage-Grouse Core Area Protection
 - a. https://wgfd.wyo.gov/WGFD/media/content/PDF/Habitat/Sage%20Grouse/Governor-Gordon-Greater-Sage-Grouse-EO-2019-3_August-21-2019_Final-Signed_1.pdf
16. Wyoming Game and Fish Stream Classifications
 - a. <http://wgfd.maps.arcgis.com/apps/MapTools/index.html?appid=31c38ed91cf04fb7bb8aebd29515e108>
17. U.S. Forest Service Paleontology



- a. <https://www.fs.usda.gov/science-technology/geology/paleontology>
18. U.S. Bureau of Reclamation Fossil Resources
 - a. <https://www.usbr.gov/cultural/fossil.html#:~:text=To%20date%2C%20Reclamation%20has%20documented,have%20occurred%20on%20Reclamation%20land.>
19. U.S. Fish and Wildlife Service Historic Preservation
 - a. <https://www.fws.gov/historicPreservation/crp/index.html>
20. U.S. BLM Paleontological Resources
 - a. <https://www.blm.gov/paleontology>
21. National Park Service Fossils and Paleontology Laws, Regulations, and Policies
 - a. <https://www.nps.gov/subjects/fossils/fossil-protection.htm>
22. Wyoming County Commissioner’s Association Socioeconomic Initiative
 - a. <https://www.wyo-wcca.org/index.php/initiatives/wcca-socioeconomic-initiative/>
23. USDA Introduced, Invasive, and Noxious Plants Database
 - a. <https://plants.usda.gov/java/noxious>
24. Stream Names in Johnson County, Wyoming
 - a. <https://www.mytopo.com/locations/features.cfm?s=WY&c=019&type=Stream>
25. 2001 Roadless Rule
 - a. <https://www.fs.fed.us/emc/nepa/roadless/2001RoadlessRuleFR.pdf>
26. BLM Manual 1626 – Travel and Transportation Management Manual
 - a. <file:///C:/Users/BreeL/Downloads/Media%20Center%20BLM%20Policy%20Manual%20MS%201626.pdf>



APPENDIX C: STEERING COMMITTEE MEMBERS

Member	Affiliation
Jim Waller	Johnson County Planning & Zoning
Craig Cope	City of Buffalo Planning & Zoning
Zach Byram	Clear Creek Conservation District
Kelly Norris	Wyoming State Forestry Division
Joe Landsiedel	Timber Industry
Rick Pallister	Public Lands Association
Luke Todd	Clear Creek Conservation District Board
Rod Litzel	Johnson County Weed & Pest
Ben Schiffer	WWC Engineering
Kirby Camino	Sheep Industry/Predator Control Board
Nathan Williams	Southern Johnson County
Anita Bartlett	Powder River Conservation District
Barry Crago	Deputy County Attorney



APPENDIX D: PUBLIC COMMENTS RECEIVED

Comment Received From	Comment Received	Response
Bighorn National Forest	<p>Page 1, last paragraph, 1st sentence – “agencies are required to identify and analyze the impacts to local economies and community.” We are unfamiliar with a specific analysis requirement for all local economies and communities. Executive Order 12898 directs 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, policies, and activities on minority and low-income populations. For the Forest Service specifically, per USDA direction from 1995, where Forest Service proposals have the potential to adversely affect minority or low-income populations disproportionately, effects must be considered and disclosed (and mitigated to the degree possible) through NEPA analysis and documentation.</p> <p>If the county is referencing a different authority or requirement, please provide a specific citation.</p>	Citations were added to paragraph for better clarification.
Bighorn National Forest	2nd paragraph – Provide a formal citation with page numbers for consistency review definition.	Consistency review is explicitly described in NEPA and FLPMA



		and summarized in the introduction of the NRMP.
Bighorn National Forest	4th paragraph, 2nd sentence – Recommend adding the new CEQ citation: § 1501.1 NEPA thresholds.	Citation added.
Bighorn National Forest	Last paragraph, 1st sentence - Does 40 C.F.R. §§ 1506.2, 1506.2(d) include both EIS and EA documents or is it only an EIS that is required to have a consistency review?	NEPA does not distinguish between EAs and EISs. The county expects that consistency review applies to all NEPA decisions.
Bighorn National Forest	3rd paragraph, 1st sentence – “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.” Please consider updating this statement to be more in line with CEQ regulation language (e.g., a concise statement of what constitutes a “major federal action” as a threshold for requiring a NEPA process and include a citation). See CEQ 1508.1(q)(1).	Revised language.
Bighorn National Forest	4th paragraph, 2nd sentence – “A NRMP ensures that the federal agency addresses the county’s policies for virtually every federal decision without the burden of cooperating agency status.” Can you please provide a citation for this authority?	Clarified in the document. However, the preceding and following paragraphs speak for themselves and clearly lay out why adopting a plan ensures that virtually every agency decision must address the County's policies. By adopting a NRMP, agencies now have the obligation to review their decisions through the lenses of consistency review and coordination.



Bighorn National Forest	7th paragraph – “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.” Can you please keep a direct interpretation of the code to include only “coordinate” and remove the term “compatibility?” Otherwise this would appear to suggest that a forest plan revision or amendment would be triggered. The county has been closely involved as a cooperator in the prior 2005 forest plan revision and would be included in future forest plan revisions and amendments.	Compatibility needs to remain. It is acknowledged that the County was involved as a cooperating agency in 2005 and appreciated that the BBNF intends to keep the County involved as a cooperating agency in future revisions and amendments. However, as is explained in the commented paragraph, whenever such a plan revision or amendment occurs, there needs to be coordination with this NRMP, which should attempt to achieve compatibility with this NRMP whenever allowed by law and this obligation cannot only be pacified solely by allowing the County to be a cooperating agency.
Rob D. - Council for the Bighorn Range	Johnson County could separately participate in the NEPA process as a "cooperating agency" (p.3). Unlike the Falen Law Firm analysis, it does not require the federal agencies to work with local governments before any plan or proposal is presented to the general public. That would be inconsistent with Wyo. Stat §§ 16-4-401 through 16-4-408, allowing for participation and contribution from the public. Throughout the document, there is a push to do all these interactions before dealing with the public.	The county has a specific right to coordination and coop agency along with coordination allow them to have specific input before the plan goes out to the public. (taken citation from plan).
Bighorn National Forest	1st paragraph, 2nd sentence – “Written comments submitted by a local government not tied to a formally adopted NRMP require less	The laws and regulations governing consistency review and



	<p>consideration than those tied to an adopted NRMP.” Is this tied to a specific law, regulation or policy that speaks to “weighing” comments based on their tie to a formally adopted NRMP?</p>	<p>coordination specifically refer to reviewing state or local government "plans or laws." See for e.x. 40 C.F.R. § 1506.2 (To better integrate EIS into state or local planning processes, statements shall discuss any inconsistency of a proposed action with any approved State or local plan and laws. Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law). Without having a written plan or law, this process is not required or undertaken, thus, comments that are not tied to a NRMP are not given the same weight because consistency review and coordination are not required when reviewing those comments.</p>
<p>Bighorn National Forest</p>	<p>2nd paragraph, last sentence – “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.” The CEQ regulation states that local agency of similar qualifications may become a cooperating agency by agreement with the lead agency. An agency may request that the lead agency designate it a cooperating agency (40 CFR 1501.8). Specific responsibilities are identified (via a memorandum of understanding or other agreement document) for both the lead Federal agency and the cooperating agency and can include a significant investment of time and resources. Therefore, it would be helpful to</p>	<p>One of the main purposes of this NRMP is to inform agencies when the County would likely want to participate as a cooperating agency. In turn, many of the policies adopted in this plan specifically lay out when the county would like to be included as a cooperating agency.</p>



	<p>define where the county may be interested in pursuing cooperating agency status (i.e., a table of examples in the appendices). Specifically, it would be helpful so that the BNF and District have an idea of how best to engage with the county on issues of concern.</p>	
Bighorn National Forest	<p>Priority #1 – “1. Quantitative data should be included in federal land use planning decisions that meets credible data criteria, even if the data were not produced by a federal agency.” While an EIS/ROD often involves quantitative data in order to take a “hard look” at the effects of a project, an EA/DN does not always involve as hard of a look with quantitative data and often relies on a substantial amount of qualitative data and input from specialists with field knowledge (see Administrative Procedures Act). The Forest uses quantitative data whenever it is readily available and necessary to meet requirements of project planning and forest plan monitoring requirements; however, collection of additional project-level monitoring data requires additional staffing and resources that often come with a high cost. We encourage the County to identify more specifically what specific quantitative data parameters would assist us in fostering cooperative land management and any solutions suggesting how we can cooperatively fund those monitoring efforts. The Forest currently considers monitoring data from a number of partners and cooperators (i.e., volunteers, WGFD, State Forestry, academic institutions, & WYNDD). We recommend removing the term “require” and stating the following: “land use planning decisions should include consideration of the best available scientific and monitoring data...”</p>	<p>Comment received and taken into consideration. No changes were made.</p>
M. Dudley C.	<p>“In more recent times, there are many people from out-of-state ...”. I would like to see employment and tax dollar figures for the recreational industry in Johnson County. How much in tax dollars did the recreational industry contribute to the county on average each year for the last 10 years? How many county taxpayers does each industry employ?</p>	<p>Comment received and taken into consideration.</p>



Linda G.	paragraph 2: Please confirm where S. Bruner found that information. I believe it may be from a book by T.A. Larsen paragraph 3: Please rework this paragraph using less incendiary language. We still have strong feelings in the community about this event.	Language updated in document.
Bighorn National Forest	Page 8, 1st paragraph, last sentence – Is this a “policy” document issuing authority or is this a “guidance” document for cooperative land management planning?	This document provides policies for the county that provides guidance for federal agencies on natural resource decisions on public lands throughout the county.
Council for the Bighorn Range – Rob. D.	The NRMP in the county overview skips out on the contributions to the current custom, culture, and economy of Johnson County provided by the strong presence of federal land management agencies. Johnson County is host to one of the largest field offices in the Bureau of Land Management, surpassing the recently relocated headquarters to the BLM in Grand Junction, Colorado. Funding for the Soil and Conservation services are, in large part, from federal funds. The benefits paid to those staff provides an underpinning of funding for our healthcare system, in real estate, and keeping a retail presence that all call access. This funding for our public health and civic well-being not tied to the fortunes of agriculture or energy.	Information was added to this paragraph.
Council for the Bighorn Range – Rob D.	The property clause from the Constitution needs to be in the plan as it is the primary authority for all lands owned by the United States and originates with Congress. It	This is outside the scope of this document. The County recognizes the property clause in the



	<p>supersedes the national legislation discussed in this plan. Article IV, Section 3, Clause 2: Property Clause; The Congress shall have the power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States; and nothing in this Constitution shall be so construed as to Prejudice any Claims of the United States, or any particular State. Federal lands in Wyoming were never the property of the state.</p>	<p>Constitution. Please see the purpose of this document on page</p>
M. Dudley C.	<p>“Coal, timber, natural gas, bentonite, and uranium mining contribute extensively to the development and the current custom, culture and economy of Johnson County ...”. I would like to see employment and tax dollar figures associated with each of these extractive and renewable industries. How much in tax dollars did each contribute to the county on average each year for the last 10 years? How many county taxpayers does each industry employ?</p>	<p>Comment received and taken into consideration.</p>
Linda G.	<p>last paragraph: A couple of those communities listed are really no longer recognized as communities</p>	<p>Information was double checked and corrected.</p>
Bighorn National Forest	<p>Page 11, very bottom. The Revised Land and Resource Management Plan was approved in 2005. Two plans, the Northern Rockies Lynx Amendment (2007) and the Greater Sage-Grouse Record of Decision: Northwest Colorado, Wyoming (2015) modify specific activities in the 2005 Revised Land and Resource Management Plan. This is true for lynx, not for sage grouse. Sage grouse ROD had Bighorn NF conspicuously cut out and that decision does not apply to Bighorn NF.</p>	<p>Information added to document.</p>
Bighorn National Forest	<p>Page 12, 2nd paragraph, 4th and 5th sentences – recommend the term “local” be replaced with “United States citizens” since, under</p>	<p>Updated language in the document for clarity.</p>



	the Organic Act of 1897, forests are managed to include benefits for both local and nonlocal citizens and communities.	
Bighorn National Forest	Page 12, 2nd paragraph, probably should add that the Big Horn Forest Reserve was one of the original Forest Reserves in the 1897 Organic Administration Act	Updated language in the document for clarity.
Bighorn National Forest	Page 12, 3rd paragraph, 2nd sentence – recommend replacing “non-timber” with “multiple uses.”	Updated language in the document for clarity.
Bighorn National Forest	Page 12, 4th paragraph, need to state which of these BNF districts overlap with the Johnson County boundary.	Updated language in document for clarity.
Bighorn National Forest	Page 12, last paragraph. The following should be added: Johnson County participated with the Bighorn National Forest during the plan revision and continues to participate twice a year on a Steering Committee. The Steering Committee has been recognized by the USFS Regional Forester in April 2019 for creating and maintaining resilient landscapes and as a model for effective collaboration.	Updated language in the document for clarity.
Linda G.	stock driveways are not a term the locals use. Stock trails or stock drives are more often used.	Updated language in the document for clarity.
Bighorn National Forest	Page 14, 6th paragraph. “Roadless” does not mean without roads on the Bighorn NF. Same comment on page 24, first sentence under the roadless section. Consider including the Forest “roadless” map in the document. Any verbiage in the NRMP regarding roadless areas should be consistent with the policies and terminology in the 2001 Roadless Area Conservation Rule: https://www.fs.fed.us/emc/nepa/roadless/2001RoadlessRuleFR.pdf	Information added to document.
Bighorn National Forest	Page 14, 6th paragraph. “Improved” and “maintained” road definitions do not match USFS manual/handbook. We have five maintenance levels for our road system.	Updated language in the document for clarity.



Bighorn National Forest	Page 14, 7th paragraph. Might want to include the emergency closure order process that is delegated to Forest Supervisors and applies to road and areas.	Unable to find the exact emergency order process discussed here to incorporate into document.
Bighorn National Forest	Page 14, 5th paragraph – “Road closures in Johnson County without prior coordination with the County can cause economic harm and impact citizen and visitor enjoyment of the County’s natural resources.” Recommend changing “can” to “could” and mentioning that the USFS has provided coordination with the County on road closures in the past and would continue to do so.	Language was changed from can to could. Johnson County recognizes and wants to continue coordination with the BHNF.
M. Dudley C.	The whole page seems to be designed to give the impression that R.S. 2477 is still a valid statute. There are conflicting statements of law on this page. For example, “Even though FLPMA repealed R.S. 2477...” vs. “Congress has yet to overturn R.S. 2477 ...” vs. “The repeal of R.S. 2477...”. If FLPMA repealed R.S. 2477 then Congress did overturn R.S. 2477. 'This whole page is disingenuous and should be rewritten.	Comment received and taken into consideration.
Jacquelyn W.	See 2.2 TRANSPORTATION AND LAND ACCESS; the text used to explain the History, Custom, and Culture; and Federal Highway Administration; R.S. 2477 is an interesting build up to page 17, fourth paragraph . . . “In relation to the roads at issue here, this scope would be access to, and between private land sections.” It is not clear what the text, the roads at issue here, is referring to. Are there specific roads or areas that are problematic?	Language was updated for clarification of this paragraph.
Council for the Bighorn Range – Rob D.	The NRMP includes a lengthy section on RS 2477. This statute has generated considerable income for the Falen Law Office over the years. Still, our research has not gained much traction to overturn its repeal with the passage of the Federal Land Policy Management Act of 1976 (FLPMA). Western State-US Senators, including Senator Barrasso (R-WY), have at various times in their career to up-end or	Comment received and taken into consideration.



	<p>overturn the '76 FLPMA but is unlikely ever to happen. The State of Utah has squared up behind the defunct statute and lost time and time again. The Bighorn National Forest 2005 Revised Forest Management Plan has a travel management plan that Johnson County backed in 2005 that addresses the few RS 2477 rights of ways that existed in 1976. The Buffalo BLM Revised Management Plan in 2015 also addressed these issues.</p>	
Bighorn National Forest	<p>Page 18 Item 5. Forest Service Trails by policy are not considered roads. They have their own standards. “Public trails shall be considered “public roads and highways” is inconsistent with Forest Service policies and should be removed.</p>	<p>Language updated to address inconsistencies.</p>
Bighorn National Forest	<p>Page 18, Item 3. Include a specific list of the roads that included in this category. Need specific data.</p>	<p>Comment received and taken into consideration.</p>
Bighorn National Forest	<p>Page 18. Item 4. Include a map with the “stock trails” that are being referenced. Need specific data.</p>	<p>Comment received and taken into consideration.</p>
M. Dudley C.	<p>“There are currently non RNAs in the County, but some have been proposed by the USFS. (USFS RMP Appendix E) (USFS, n.d.-a). These proposed RNAs should be listed here and shown on Figure 3 or on a separate figure in this chapter for public information.</p>	<p>Proposed RNAs were added to text in document, map information not available.</p>
Linda G.	<p>Typo: Research Natural Areas paragraph: Recreation in RNAs “is” not encouraged. Special Rec and Extensive Rec Management Areas: such as developing trailhead areas.</p>	<p>Updated language in the document for clarity.</p>
Jacquelyn W.	<p>Regarding Research Natural Areas, page 19, “There are currently no RNAs in the County, but some have been proposed by the USFS.” Can these proposed areas be listed?</p>	<p>Proposed RNAs were added to text in document.</p>
Council for the Bighorn Range – Rob D.	<p>The Council for the Bighorn Range (CBR) supports the current ACEC, Research Natural Areas, Special Recreation, and Extensive</p>	<p>Comment received and taken into consideration.</p>



	<p>Recreation Areas and their special management in Johnson County. Multiple Use is not the same as every use, everywhere and all the time as projected in the NRMP. Neither the Bighorn NF nor the Wyoming BLM can nominate wilderness under current law outside their planning rules. That has been the intent of Congress since the 1980s. Wilderness nomination and Wild and Scenic Rivers can be nominated by citizens and local governments to our Congressional delegation.</p> <p>The Fortification Creek and Johnson County Wyoming Public Lands Initiative (WPLI) delivered to WCCA their recommendations on Fortification Creek, Gardner Mountain, and North Fork WSA's on time. The Council for the Bighorn Range supports those recommendations. The Johnson County BOCC approved the BNF 2005 Forest plan that nominated the Rock Creek area, recommended wilderness, to the Cloud Peak Wilderness. It is recommended wilderness and withdrawn from the 2001 RACR.</p>	
Jacquelyn W.	Typo: page 20, Wild and Scenic Rivers, following Table 1. The last sentence in the first paragraph is repeated as the first sentence in the next paragraph.	Updated language in the document for clarity.
Jacquelyn W.	Under Wilderness Study Areas (WSA), Fortification Creek WSA, Gardner Mountain WSA, and the North Fork of Powder River WSA (pages 21 – 22), are being released from WSA status. What is the motivation in choosing to release these areas? Perhaps a response to this question is on page 25, Priorities, item number 8. Support the development of . . . public access, . . . offers tremendous recreational opportunities . . . for tourism and recreation. Am I reading this correctly? Can the reasoning be clarified and placed with the information on pages 21 and 22?	Language updated for clarification.
M. Dudley C.	The WPLI Committee recommends that the Fortification Creek WSA, Gardner Mountain WSA, and the North Fork of Powder River WSA should be released from WSAs and no longer be eligible for	Comment received and outside scope.



	<p>Wilderness Designation.</p> <p>'Instead the Committee wants these WSAs to become Management Areas where grazing, livestock management and infrastructure would be allowed. This is nothing but a thinly veiled attempt to turn these areas into cattle and/or sheep grazing areas where ranch ATVs and/or trucks would be allowed for stock watering, livestock management and livestock infrastructure, which would all but ruin these areas from ever being considered in the future for Wilderness Study Areas to the detriment of elk, bald eagles, peregrine falcons, hawks and trout. At the very least Environmental Impact Statements should be required before any change in these areas is considered. And allowing hunting in Elk critical winter habitat is just plain stupid. Elk aren't stupid. They will die from hunting and will leave this area if they are hunted, then so much for their critical winter habitat.</p>	
Linda G.	First paragraph: No apostrophe after importance	Updated language in the document for clarity.
Bighorn National Forest	<p>Page 24 roadless section: That is actually not too bad. The only possible comment is in paragraph 3: "The second recommendation was that the boundaries of roadless areas in the BHNF should be redrawn in accordance with the boundaries set forth in the Forest Plan..." this is really minor...but... The forest plan really did not 'set forth boundaries.' There was no forest plan Decision on anything that had to do with roadless. There was a roadless inventory in the FEIS, which was done per the FSH planning handbook on wilderness – this section of the handbook required that during revision, forests do a roadless inventory, per specific definitions, and consider those areas for potential wilderness recommendations. So, we did the inventory, it was used to inform the management area designations, most notably for Rock Creek 1.2. But that particular roadless inventory was NOT a decision, carried no weight for future work under our ROD. But the roadless collaborative did use those</p>	Updated language in the document for clarity.



	boundaries as the basis for their recommendation... they used that inventory as a starting point for their inventory, and for the most part, kept those boundaries. So, not a huge deal. but... the forest plan did not 'set forth' any roadless boundaries. It was purely an inventory, with no decision related to it.	
M. Dudley C.	Nos. 12, 13, 14 and 15 are bad ideas as written.	Comment received and taken into consideration.
M. Dudley C.	3 – The WPLI Committee recommendations should be rejected and so stated in this report.	Comment received and taken into consideration.
M. Dudley C.	12 – The County should not support State efforts to petition the USFS for a Wyoming specific Roadless Rule. This would eventually lead to a different roadless rule for every state, thus greatly complicating enforcement in this area. More taxpayer money wasted. The Roadless Rule is based on environmental, wildlife and habitat concern that do not comport with artificial state boundaries.	Comment received and taken into consideration.
M. Dudley C.	13 – For the same reasons stated above in No. 12, restrictive management of roadless areas should not be discouraged and multiple uses should instead be disallowed. Also, allowing multiple uses would result in more roads being built and effectively destroying the whole purpose of such a roadless area.	Comment received and taken into consideration.
M. Dudley C.	14 – Responsible development of natural resources within roadless areas should not be encouraged for the reasons stated above.	Comment received and taken into consideration.
M. Dudley C.	15 – The County should not support construction of temporary roads necessary to service natural resource development. There is no such thing as a temporary road. Any road built will last generations. I have seen dirt and gravel roads put in in the mountains of Colorado in the 1880s for horse drawn wagons that	Comment received and taken into consideration.



	you can still drive jeeps up in 2020. The only way to do a temporary road is to have the entity building the road completely destroy the road when the use is over. In other words, tear up the road completely regrade, reseed and replant the roadway to its former landscape. Also, temporary roads may actually help increase the number of human caused wildfires.	
Bighorn National Forest	Page 25, Priority Item 3 – “Ensure that decisions regarding Wilderness Study Area designation by Congress consider the recommendations put forth by the WPLI Committee.” The Forest is committed to working cooperatively with the county in coordinating any future special designation efforts. Bighorn does not have any wilderness study areas. The Forest has definitely pushed what is allowed in RACR IRAs, per the Rule, so we could say: “we concur, per the limitations of the rule,” as you suggest...	Comment received and taken into consideration
Linda G.	First bullet: allows should be allow. Not sure you need the : of all homes phrase. Next paragraph: contributes should be contribute	Updated language in the document for clarity.
Bighorn National Forest	Page 28: Suggest adding to the fourth paragraph the following language: “After the BW-HMA was completed, the Bighorn National Forest, along with many interagency partners, began implementing the Buffalo Municipal Watershed project, which encompasses approximately 38,000 acres with mixed treatments to include timber sales, thinning, prescribed fire, and aspen regeneration.	Updated language in the document for clarity.
Mitchell B.	I agree with some of the draft plan. I would like more use of prescribed burning to lessen fuels for wildfires. I would like the draft plan to state that building homes in fire-prone areas should be at the owner’s risk and be discouraged. I feel that the costs of maintaining homes in remote, fire-prone areas should be completely the responsibility of the owner.	Policy statement was added to wildfire section to support coordination between the County and federal agencies to promote and optimize fire preparedness.



Bighorn National Forest	Pages 28-29. All paragraphs – The Forest will continue to coordinate on Fire Management with the county.	Comment received and taken into consideration, The County hopes to continue this coordination.
Linda G.	1. Should including be at the end? 6. control should be controls	Updated language in the document for clarity.
M. Dudley C.	Many of these priorities are just another thinly veiled attempt to extend cattle and/or sheep grazing where such grazing did not exist before a wildfire occurs.	Comment received and taken into consideration.
M. Dudley C.	6. Management tools should include planting native grasses, plants and trees so that there are no monocultures which would enable the spreading of plant diseases and harmful insects. Also, deer, elk, antelope and other appropriate native woodland and/or grassland species should be reintroduced as quickly as possible. Domestic cattle and sheep are not native to this area and should not be reintroduced until native species have time to repopulate the area.	Comment received and taken into consideration.
M. Dudley C.	11. Again, cattle and/or sheep grazing should not be allowed until native species have had time to repopulate the area.	Comment received and taken into consideration.
M. Dudley C.	12. For the reasons stated earlier, temporary roads should not be created for access to additional areas.	Comment received and taken into consideration.
Bighorn National Forest	Page 29: Suggest including prescribed fire as a management tool. Priority 1: change “shall” to “will continue to” coordinate with local fire agencies and ‘will continue to” adhere to all requirements.	The county appreciates that current coordination with the Forest Service. Information has been added into the background to acknowledge this coordination.
Bighorn National Forest	Page 30, Figure 5. Very difficult to determine the colors with the years of the polygons. Consider cross-hatching or other ways to tell the differences. Can a more in-depth fire history be included in	Municipal watershed boundary added to map. Table with acreages



	<p>Figure 5 to demonstrate fires that severely damaged the watershed? Can you provide a legend that differentiates between severe fires (i.e., crown fires) and ground fires. The forest plan states the following:</p> <p>Objective 1.c. Increase the amount of forests and rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects and diseases, and invasive species.</p> <p>Strategy 7: In accordance with the 2009 fire management policy, allow the natural role of fire to be restored in the ecosystem.</p> <p>We encourage modifying the NRMP to reflect the continued cooperation with the county to implement forest plan objectives, strategies, and desired conditions for healthy forests and rangelands.</p>	of fires was added to background of document.
M. Dudley C.	“subalpine fire” should be “subalpine fir” in fifth line down.	Updated language in the document.
Linda G.	paragraph 2 Should “Timber harvesting” be there?	Updated language in the document for clarity.
Bighorn National Forest	Page 31, first sentence of 2nd paragraph: “The Bighorn Forest Reserve was established in 1897 and has been managed by the USFS since.” The Forest Service was not established by congress until 1905. Managed by Dept. of Interior prior to that.	Updated language in the document for clarity.
Bighorn National Forest	Page 31, 2nd paragraph, second sentence does not make sense “Timber harvesting, the County historically paid for the maintenance of forest roads...”	Updated language in the document for clarity.
Bighorn National Forest	Page 31, 2nd paragraph. – “Currently, the main harvesting of forest products within the County is limited to firewood, posts and poles,	Updated language in the document for clarity.



	and Christmas trees.” Is this statement accurate when considering the commercial harvest in the Billy-Jean Timber Sale and Buffalo Municipal Watershed projects as well as the Forest’s 10-year Timber Action plan including potential projects in Johnson County? Recommend removing “limited” and including “commercial timber harvest.” Clear Creek and Crazy Woman Creek was designated by Chief of Forest Service, upon recommendation of Governor Mead, as an Insect and Disease treatment area under Section 8204 of the Agriculture Act of 2014 , and we have done at least 7 sawtimber/multi-product sales since about 2012 in that area.	
Bighorn National Forest	Page 31, 3rd paragraph – suggest updating numbers as they are 20 years old!	Updated language in the document for clarity.
Bighorn National Forest	Page 31, 4th and 5th paragraph – suggest fact checking numbers!	Data came from Wyoming State Forestry.
Council for the Bighorn Range – Rob D.	Dr. Dennis Knight authored the "Historic Variability" of the Bighorn NF for the 2005 Forest Plan. Knight's forests did not evolve with logging in his "Mountains and Plains" book. Some of the lowest productivity forests in the country are in the BNF. Logging should benefit the County is stated as an objective on Pg. 31. Currently, all of the timber material from the BNF within Johnson County is going to either Montana or South Dakota. These materials are going as raw material with no added value from any local processing. Additionally, there are only a handful of individuals who make their living from logging. Every acre harvested on the BNF costs the taxpayer at least \$1000. For the Buffalo Municipal Water Project, that number could be as high as \$3000 per acre.	Comment received and taken into consideration.
Linda G.	8. Omit “upon”	Updated language in the document for clarity.



Bighorn National Forest	Page 32, suggest adding prescribed fire to priority #3	Prescribed fire added to policy statement.
M. Dudley C.	This section completely leaves out the possibility of land exchanges of state land for Federal land. When looking at Figures 2, 3, 4 and 5 I am struck by the enormous number of non-contiguous state and Federal lands in Johnson County. I have never seen this in another county I have lived in in the U.S., and I have lived in six other states in the U.S. I can only imagine that this has something to do with extractive mining and/or land no private owner would want. One idea might be to exchange state lands in the southwest and northwest parts of the county for BLM lands in the southeast to northwest corridor of the county, thus enlarging the contiguous BLM lands and state lands in these areas.	Updated language to include State lands in land exchanges.
Linda G.	paragraph 4: The Bighorn Mountains “were” formed	Updated language in the document for clarity.
Council for the Bighorn Range – Rob D.	A recent Buffalo Bulletin article July 16, 2020, described how the energy industry is \$20 million in arrears on paying their taxes for a non-renewable resource. The industry continues to extract the non-renewable resource for which there is probably no method to recover those taxes once the resource is removed. In consultation with Johnson County's federal partners, the County cannot be in support of the reduction of royalties, local payments to schools, infrastructure, or oversight of receipts to the State of Wyoming. In early 2020, Johnson County Commissioners settled for 50 cents on the dollar for back taxes owed by an energy company.	Comment received and taken into consideration.
Council for the Bighorn Range – Rob D.	The energy industry has also received relief from monitoring and compliance with long-established environmental regulations. The lack of enforcement and monitoring is not good for the community as they do not have resources or authority to enforce basic health and safety across the industry.	Comment received and taken into consideration.



Council for the Bighorn Range – Rob D.	Johnson County should reject the entire section on pipelines and hand it back to Y2 and come up a section that reflects the genuine interests of local government and the protection of private rights of surface owners and water users.	Comment received and taken into consideration.
M. Dudley C.	“mining remains a significant portion of Johnson County’s domestic production.” I would like to see what the dollar amount of this production is as compared to Johnson County’s GDP. “significant portion” conveys no real quantifiable meaning. If it is 20 percent of GDP, then it should only carry that proportionate percentage weight in making county decisions.	Comment received and taken into consideration.
Linda G.	paragraph 1: Coal production is a large corner industry... Actually, we have mor oil and methane production (had) than coal production paragraph 2: comma after pricing	Updated language in the document for clarity.
M. Dudley C.	This section should really be entitled Mining & Inorganic Material Resources. This section lists coal, uranium, bentonite, granite, limestone, scoria, sand, gravel, marble, gneiss, gypsum, and amphibolite as minerals. Actually, the only true minerals in this list are gypsum and amphibolite. Uranium is an element. Bentonite, granite, limestone, scoria, marble, and gneiss are types of rock containing numerous different minerals. Sand and gravel also contain numerous different minerals. Coal is also a type of rock mostly composed of elements, not minerals. See references below (attached in email).	Comment received and taken into consideration.
Mitchell B.	I feel that renewable energy operations should be given equal or higher priority over extractive energy operations. I feel that the permitting process should be left to the land management agencies and all decisions should be guided by scientific examination utilizing the professional staff employed to make said decisions. Water and	Comment received and taken into consideration.



	air quality are paramount. Flaring (floring?) should be disallowed. I agree with the plan on climate change analysis. I support proper scientific findings on climate change and greenhouse gasses and feel we need to both listen and act to improve air quality.	
Linda G.	paragraph 6: typo been instead of bene	Updated language in the document for clarity.
M. Dudley C.	<p>“development of hydrocarbon reserves” and “development of these resources.” Hydrocarbon reserves should not be further developed, especially coal. Coal was a pre-twentieth century mainstay for energy production and contains the least energy per pound of any of the fossil fuels. In order of energy retrievable per pound wood has the lowest energy retrievable, then coal, then oil, and then natural gas. Coal can simply not compete with oil and natural gas unless its production cost is artificially made lower thru government subsidies (i.e. higher taxpayer costs and less state revenues). Furthermore, renewable energy resources (wind, solar and hydropower) now have lower energy production costs than oil and natural gas. The only reason oil and natural gas are competitive in cost production with renewable energy costs is that their production costs are kept low thru government subsidies. And, finally, nuclear energy production is far more costly than any of the fossil fuel costs and has the highest potential for safety disasters. Just look at Three Mile Island and Chernobyl. Whether Johnson County’s government likes it or not, the future of energy production is in renewable energy and fossil fuel. And if Johnson County doesn’t get on board with renewable energy production and infrastructure, it will be left in the dust by other counties, states and governments never mind public and private companies. This will all but guarantee that Johnson County’s economic development will be in peril in the near future, if not already.</p>	Comment received and taken into consideration.



M. Dudley C.	<p>I disagree with both items 1 and 2 and would reword them as follows.</p> <ol style="list-style-type: none"> 1. Not support the streamlining of the permitting process for new activities within Johnson County to allow for more exploratory drilling and mining and improved access to reserves. 2. Not support the consideration of all lands within the political jurisdiction of Johnson County be opened to mineral exploration and extraction unless specifically precluded by federal, state or local law. 	Comment received and taken into consideration.
M. Dudley C.	<p>8. I disagree with including the General Mining Law of 1872. This law needs to be repealed, or at the very least this law needs to be amended to allow mining leases to be sold at current fair market value. This is another government subsidy for mining companies that costs the U.S. taxpayers millions of dollars each year in lost revenue and hides the true costs of mining in the U.S.</p>	Comment received and is outside the scope of this document.
Bighorn National Forest	<p>Page 40, item #7 – “all plans must demonstrate an understanding of the county’s plans and policies and resolve any conflicts with the County’s plans.” Is this statement going to trigger a forest plan revision or amendment to “resolve” conflicts with the county plan? What is the citation for this authority? Forest plans are required to follow the 2012 Planning Rule which may or may not necessarily be consistent with every objective priority listed in this NRMP. We recommend that this paragraph be restated as follows: “Federal land management agencies should make cooperative efforts to work toward consistency with the County’s plans whenever it is appropriate and feasible to do so given current requirements, policies and resource conditions.”</p>	This will not trigger a new Forest Plan; everything moving forward shall consider this plan.
Linda G.	<p>#14 insert County for Johnson County Weed and Pest #16 omit “of” #28 Please define Superfund sites</p>	Suggested changes made to priority statements.



Bighorn National Forest	Page 41, item #13 – “Encourage mining reclamation to use best management practices (BMPs) instead of requiring restoration to as near the same condition as original. Consider nonnative seeding where beneficial.” The Forest recommends including the following statement: “mining reclamation and restoration in special designation areas would be considered on a case by case basis.”	Language added to priority statement.
M. Dudley C.	Items 19 thru 23 should be dropped from this list of priorities or changed as follows: Item 19. The use and transmission of coal as an energy source should be phased out and people employed in that industry should be retrained for employment in the renewable energy industry. Item 20. Discourage implementation ... Item 21. Do not support ... Item 22. Do not support ... Item 23. Do not support ... Item 28. The county does support Superfund sites. Should there be a massive fossil fuel cleanup needed a Superfund site would provide much needed Federal monies to help clean up such a site. For example, the mining water spill site near the Animus River in Colorado became a Superfund site.	Comment received and taken into consideration.
Linda G.	Second sentence: Change well to wells	Updated language in the document for clarity.
M. Dudley C.	All mention and support for enhanced or tertiary oil and gas recovery techniques, such as thermal recovery, hydraulic fracturing, gas injection, chemical flooding or horizontal development should be deleted from this subsection. These methods are inherently dangerous to underground water aquifers that supply water to ranchlands, farmlands, subdivisions, and municipalities. Many of the fracking fluids and chemicals used are carcinogenic and poisonous and can be carried by these aquifers for dozens of miles.	Comment received and taken into consideration.



	Such fracking can also destabilize underground rock formations and result in earthquakes which can also disrupt underground aquifers.	
M. Dudley C.	1. Drop item 1 or reword it as follows: Discourage support for... 4. Drop item 4 or reword it as follows: Discourage use of secondary and enhanced (tertiary) recovery methods where possible ... 7 and 8. Drop both items or rewrite them as follows: Discourage the 10. Modify this item as follows: Discourage the disposal of oil and gas produced water into surface waters or underground waters of Johnson County. Add an item 12: Encourage Wyoming's state government to discontinue all subsidies to oil, gas and coal producers.	Comment received and taken into consideration.
M. Dudley C.	Last sentence should read: Wyoming does not have but should have a renewable portfolio standard goal to generate a certain amount of the state's electricity from renewable energy.	Comment received and language updated for clarity.
M. Dudley C.	First sentence should read: Currently there are no wind energy developments within Johnson County but there should be, because	Comment received and language updated for clarity.
M. Dudley C.	Third sentence should read: There should be an opportunity in the near future for solar energy to be implemented on all public lands.	Comment received and was taken into consideration.
M. Dudley C.	Fourth sentence should read: New development of renewable energy in the County should be encouraged.	Comment received and was taken into consideration.
M. Dudley C.	Second sentence should be modified as follows: It is important that these avenues for transmission are allowed in Johnson County.	Comment acknowledged but language was left as currently written.
M. Dudley C.	Third sentence should be modified as follows: Pipelines offer a relatively safe and effective means for delivering large amounts of hydrocarbons across extended distances with some risk for spills.	Updated language in the document.



	(I lived in a community in Illinois where an oil pipeline ruptured, and the cleanup cost was in the tens of millions of dollars and ended up being paid for by taxpayers because the pipeline company had gone out of business years before.)	
Linda G.	#6. Please add also to avoid eyesores or diminished property value or tourism revenue (or similar wording)	Updated language in document.
Linda G.	Pipelines paragraph 3 add “or” between oil and natural gas Paragraph 4 add “the” between that and field Add “the” between required and gas	Updated language in the document for clarity.
M. Dudley C.	2. Encourage the development of renewable energy ... 3. Encourage renewable energy as a means to further develop energy infrastructure and energy independence. 4. Reclamation should be considered prior to project approval. 5. Renewable energy should be given equal priority to other multiple uses in the County.	Priority statements 2, 3, and 4 were updated with this language.
Jacquelyn W.	In Renewable energy (page 45), under Priorities, the stated Objective is encouraging. Under Priorities, item numbers 1 – 4 are encouraging. Yet, in item number 5, Renewable energy should be a lower priority . . . and number 6, what are potential nuisances? Can this be clarified?	Examples of nuisances were added.
M. Dudley C.	Third sentence – Should be reworded as follows: The County should no longer be a proponent of pipeline development.	Comment received and taken into consideration.
Linda G.	Resource Management Objective Bullet: Change take to takes	Updated language in the document for clarity.
Bighorn National Forest	Page 47, Priority #4 – “Encourage pipeline development to be in the most direct path regardless of land ownership, with a preference to placement on federal lands.” Recommend adding the following	Updated language in the document for clarity.



	text: "...except where special designation prohibits or limits surface disturbance." This action would require NEPA	
Bighorn National Forest	Page 47 Air Quality – Change “Wildfires burning on federal lands can create air quality issues...” to “Wildfires in the summer and fall can create air quality issues...” As fires burn on all land jurisdictions, not just federal and most of the smoke we see here is not from fires in the local area.	Updated language in the document for clarity.
M. Dudley C.	Rewrite numbers 1 and 4 as follows: 1. Discourage the development of future pipelines in Johnson County. Support improvement of existing pipeline infrastructure in Johnson County when it will not affect pre-existing uses or rights. 4. Discourage pipeline development from being in the most direct path regardless of land ownership. It would be preferable to placement pipelines on state and federal lands.	Comment received and taken into consideration.
Linda G.	Omit bullet #4 Agricultural practices In the next set of bullets omit #4 Emissions from farming and agricultural operations	Language omitted from document.
Linda G.	Next paragraph change lay to lays Resource Management Objective: change consider to considers	Updated language in the document for clarity.
Bighorn National Forest	Page 48, 3rd paragraph, 2nd sentence, “The Bighorn National Forest sets the standard to meet state and federal air quality standards...”	Unclear on suggested change to document.
M. Dudley C.	Rewrite sentence as follows, because as written it is somewhat awkward: Management of federal lands should consider clean air practices and limit air pollution within the County even if it means expansion of rules and policies, as long as such expansion does not unreasonably slow economic development.	Comment received and taken into consideration.



M. Dudley C.	6. Should be rewritten as follows, because the sentence as written is awkward. Ensure that there is a balance in which air quality is not compromised at the expense of economic development activities (i.e. mining, oil and gas development). Such balance should take into account potential harm that could be done to businesses within the County.	Updated language in the document for clarity.
Linda G.	Second bullet : insert 'a' between of and project	Updated language in the document for clarity.
Bighorn National Forest	Page 49, Priority #3 – “Encourage federal agencies to implement BMPs for forest management to decrease the number of summer wildfires.” Prescribed fire is a recognized BMP for reducing fuel loading and decreasing the severity of wildfires. Same holds true for Priority #5.	Prescribed fire is an accepted BMP by the County in the right circumstance.
Linda G.	Second paragraph: Omit scheduled harvesting and grazing	Language omitted from document.
Bighorn National Forest	Page 50, RMO and priority #2... “the region shall be identified through consultation and coordination with Johnson County.” Climate change regions are identified by other agencies such as NOAA. Recommend that the county share this input with NOAA as the Forest Service does not identify climate change regions and would not be changing climate change region boundaries for environmental effects analysis. We report the data that we are provided by other agencies.	Comment received and taken into consideration and noted by the County for communication with NOAA.
M. Dudley C.	I disagree with this sentence as written, because climate change is not a regional problem it is a global problem and all the Earth’s ecosystems (air, water and land) are interdependent and will all be affected by climate change sooner or later. And the sooner we tackle this problem at all levels, the sooner we can, hopefully, bring it under control before any irreversible changes take place. Beyond a certain tipping point, all life on Earth will be endangered and at risk of extinction. If we blow this challenge, the human race and most of the more complex life on Earth will expire. And perhaps a few million years from now, another species better suited to survive long term on Earth will arise. I would rewrite this sentence as follows:	Comment received and taken into consideration.



	Climate change analysis needs to be conducted on global, regional and local levels all at the same time. Long and short-term effects of climate change need to be addressed at each of these levels.	
M. Dudley C.	2. Should be rewritten as follows: Support climate change analysis conducted on global, regional and local levels. The region should be identified through consultation and coordination with Johnson County and other appropriate counties.	Comment received and taken into consideration.
M. Dudley C.	3. Second sentence should be rewritten as follows: If it is determined that the decision will have significant negative impact on the local economy, the County and the Federal Government should negotiate a modification of the decision that will minimize its negative impact on the local economy.	Updated language in policy statement.
Linda G.	Second paragraph: Omit Soils mapped for Johnson Count. below.	Updated language in the document for clarity.
Bighorn National Forest	Page 51, Priority #5. Could you please provide scientific citations to demonstrate how livestock grazing is “a key to site reclamation for soil health and biodiversity?”	Updated language in document.
M. Dudley C.	Paragraph 4 states that there are seven aquifer systems that feed Johnson County. However, nowhere in the chapter are these aquifers detailed. There should be a map showing where each aquifer is located, the range of depth of each aquifer, and the flow rate of each aquifer. Water quantity and quality analysis reports should be summarized and referenced. If any aquifer is polluted, then that should be so stated, and a list of pollutants should be provided for each aquifer.	Updated language in document.



Bighorn National Forest	Page 53, 1st Paragraph, suggest citing the Buffalo Municipal Watershed project as an example of a multi-pronged, multi-partner effort to protect water resources.	Information added to paragraph on Buffalo Municipal Watershed project.
M. Dudley C.	The fourth paragraph states: "Much of the irrigation infrastructure is aging, poorly maintained, and inefficient which significantly limits the availability of surface water resources in Johnson County ..." If this is correct, then the Resource Management Objective should be rewritten as follows: "Irrigation and water systems shall be managed, maintained and improved to ensure current and future access to irrigation water and to promote the health, longevity, and sustainability of the County's water."	Updates were made to the document for clarity.
Linda G.	Second paragraph: The second and third sentences are fragments. Please fix Omit 6th paragraph: Much of the irrigation infrastructure is aging, poorly maintained, and inefficient which ...	Language updated in document.
Mitchell B.	I agree with much of this section. I disagree with encouraging water storage infrastructure. I feel it should be only used as a last resort. I feel that water is above all the most important resource in this arid County of Wyoming. We should strive to protect the water quality and to use only the quantity needed. I believe in the importance of wetlands and feel they should be encouraged and rewarded. Recharging lands and aquifers of great importance.	Comment received and taken into consideration.
Linda G.	#6 unclear what you mean by effects of infrastructure Last paragraph: omit the dash after 500 Omit " Several dams associated with these reservoirs are classified as dams with high hazard potential which are those where failure or mis-operation of the dam will likely cause loss of human life. This tends to give the impression that the dams are not inspected regularly and have state approval.	High Hazard doesn't mean the dam is in poor condition, just that there is high risk to life if the dam were to fail for any reason.



M. Dudley C.	Rewrite 7 and 10 as follows: 7. Encourage negotiation of surface use agreements on split estates and discourage siting of oil and gas facilities on or off of irrigated lands. (Johnson County should not be encouraging or supporting any new oil or gas drilling or facilities within the county.) 10. The County encourages negotiations on the regulation of instream flows for renewal of historical irrigation ditch rights-of-way.	Comment received and taken into consideration.
M. Dudley C.	Priorities: 4. Support the proper management, maintenance and improvements of all dams, especially high hazard dams. (All dams need to be included to help prevent any dam from becoming a high hazard dam.)	Comment received and taken into consideration.
Linda G.	The graph has the capacity for Lake DeSmet incorrect. It should be 234,987 A.F. Also listing Lake DeSmet, Tie Hack and Dull Knife as high hazard is troubling. Are you meaning that in the case of a natural disaster(earthquake) the dams could fail and there would be loss of life? Those dams are regularly inspected and barring natural disaster or sabotage, they are in good shape.	Information corrected and language was updated for clarification.
Bighorn National Forest	Page 57, Priority #1. Could you please elaborate or provide examples of "other water-related concerns?" The previously suggested appendix of examples would assist the Forest in coordination of water projects.	Comment received and taken into consideration.
M. Dudley C.	Add Priority 7. Support the development of small hydroelectric generators in ditch pipes and water pipes on farms and ranches to supply electricity to the farms and ranches on which they are located. (These small hydroelectric units have been used successfully in western Colorado and the Federal Government will provide grants and loans to purchase and install these units.)	Priority statement was added to support small hydroelectric generators on public lands.
M. Dudley C.	Second Paragraph: "(1) obtain a permit; (2) demonstrate " (2) was omitted	Updates were made to the document for clarity.



M. Dudley C.	<p>Fourth Paragraph: “These groundwater resources are non-renewable and are lost for many future generations ...” This is not a true statement and should be reworded. Groundwater is renewable by irrigation waters; rainwater; snow melt; and lake, river and creek seepage.</p> <p>These groundwater resources are renewable but can take many decades to be renewed and thus can be lost to future generations as a result of non-regulated disposal during energy development.</p>	Updates were made to document for clarity.
Linda G.	<p>Second paragraph: Should #3 be #2?</p> <p>4th paragraph: Please don’t use “significantly” or “non-renewable”.</p>	Updated language in the document for clarity.
M. Dudley C.	<p>Third Paragraph: “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.” (Note: This may be true against another private property holder but is not true against a state. A state must deliberately waive or cede its right(s) before a private property holder can gain that right(s).</p>	Comment received and taken into consideration.



Bighorn National Forest	Page 58. Water Rights Resource Management Objective and Priorities #2 and #3– 2. “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.” 3. “Support recognition of water rights as a private property right that may be owned separately from land.” The Resource Management Objective statement is in direct conflict with Priorities 2 and 3 in that these priorities are contrary to Wyoming Water Law. Following these priorities as written could end up with water developments not being available to subsequent permittees on a Federal permit. Legislature considered this issue a few years ago, and WSGA would not support it.	Comment received and the steering committee does not believe this is counter to the objectives or to state law.
M. Dudley C.	Reword number 8. In-stream flow requirements or minimums are extremely important for the health of aquatic life in the stream and for the health of wildlife using the stream. 8. “It is the position of the County that in-stream flow requirements are exactions.” “It is the position of the County that in stream flow requirements are not exactions but should be negotiated for right-of-way and ditch permits.”	Comment received and taken into consideration.
M. Dudley C.	Impaired Waters Sentence two starts: “Table 2 ...” this should be “Table 3 ...”	Updates were made to the document for clarity.
Linda G.	First paragraph Last two sentences seem to contradict each other. One says high risk the next says low to moderate risk paragraph 5. The three forks meet on the foothills, should read “in” the foothills	Updated language in the document.
Bighorn National Forest	Page 64, 5th paragraph. There are many streams in Johnson County not listed that are very important to list.	A link was added to show the streams in the county.
Linda G.	Paragraph 5 last sentence streams should be stream’s	Updated language in the document for clarity.
Bighorn National Forest	Page 66. Consider adding riparian input from Bighorn NF LRMP (Soil, Water, Riparian, and Wetland 1-26 and Biological Diversity Guideline #9 on Page 1-29). There are standards and guidelines related to water influence zones.	Updated language in the document for clarity.



Bighorn National Forest	Page 66, Priority #2 - “Support the use of responsible grazing and vegetation management as a tool to maintain wetlands/riparian areas.” Can you please scientific citations for how grazing as a method will maintain wetland and riparian area conditions?	Citations were added to background information.
M. Dudley C.	No. 2 should be reworded. Grazing should not be allowed in wetlands/riparian areas. Grazing will over time destroy native wetlands and riparian areas making them unusable by native plants, native aquatic life, and native wildlife to live and thrive. “Support the use of responsible native vegetation and stream management as tools to maintain wetlands/riparian areas.”	Information was added to background section to describe when it is appropriate for livestock grazing to occur in wetlands and riparian areas.
Linda G.	Second paragraph, last sentence: Please change in the county to in Johnson County	Updated language in the document for clarity.
M. Dudley C.	No. 6 should be reworded. Wetlands are extremely important areas for native plants, native aquatic life and native wildlife to live and thrive.	Comment received and taken into consideration.
M. Dudley C.	6. “The County does support CWA jurisdictional wetland designations for wetlands not located immediately adjacent to a navigable water in the County.”	Comment received and taken into consideration.
M. Dudley C.	Tables 4 – 11 mentioned on pages 68, 74, and 75 should show the page of the report that each table occurs on. This will make it easier for people to find these tables.	Page numbers were inserted.
Council for the Bighorn Range - Rob D.	Johnson County has a diversity of habitat for wildlife that extends far beyond the listed species for home and industrial recreation. Reading through the NRMP, though, any wildlife unsuitable for consumption or trophy impedes production, sustained yield, or custom and culture.	Comment received and taken into consideration.
M. Dudley C.	last sentence – Critical habitat can only be areas that qualify as “habitat.” Be was missing.	Updated language in the document for clarity.
Linda G.	Last paragraph, last sentence: add “be” between only and areas	Updated language in the document for clarity.
Linda G.	First paragraph, first sentence: Please omit The and capitalize the N on neither	Updated language in the document for clarity.



M. Dudley C.	5. Do not support the introduction or reintroduction of listed species into Johnson County unless the County and the state and/or Federal Government can agree to terms and conditions or standard operating criteria that minimize disrupting current land uses. As written No. 5 does not give the County any negotiating room with the state and/or Federal Government. A court could even view such a hardline position as being arbitrary and capricious and simply ignore it altogether. In fact, many sections of this document as drafted could be considered either overly vague or arbitrary and capricious and courts of law might simply ignore this document when considering how to decide on a case. Being dogmatic is not a good thing when drafting a public document.	Comment received and already addressed in document. Several policies where county requests coordination.
Mitchell B.	There is much I agree with here, except for: the plans lack of support for "special status" protections for species not formally listed under the ESA. The agencies and experts that are assigned to protect species that are declared T&E or of "special status" should be allowed to do their job. Needed measures to ensure that an ecosystem and creatures within are of healthy populations is important.	CCAAs and statewide adoptions are tools to use for this. Agency specific special status species is not supported as it takes away a lot of choice from the state as the lead wildlife regulatory agency and takes away coordination from county and individual choice from landowners to use CCAAs.
M. Dudley C.	This objective should be rewritten as follows: Threatened and endangered species are managed using credible data and should be given preference over multiple use mandates in coordination with the County and other stakeholders. Other uses may in fact be causing the endangerment or threatening of species (e.g. hunting, oil and gas development, subdivision development, etc.) Therefore, making a blanket statement such as this makes no sense.	Comment received and taken into consideration.



<p>M. Dudley C.</p>	<p>A number of these priorities should be rewritten as follows:</p> <ol style="list-style-type: none"> 1. Consider delisting of any species with insufficient, unsupported, or questionable data not meeting the minimum criteria for its listing or protection level. What is insufficient, unsupported or questionable data is a factual determination which would ultimately be made in a court of law. 2. Any area may be excluded from critical habitat if it is determined that the benefits of such exclusion outweighs the benefits of designating the area as critical habitat, unless such exclusion would result in the extinction of the species. As written No. 2 does not comport with the federal law cited on page 70. 3. Upon conducting a robust and full local economic analysis of all proposed critical habitat designations in the County, if the analysis indicates that the economic harm to the County and its citizens outweigh the benefit of the critical habitat to the listed species, the FWS should consider excluding such habitat from critical habitat designations. Again, as written No. 3 does not comport with the federal law cited on page 70. 	<p>Comment received and taken into consideration.</p>
<p>M. Dudley C.</p>	<ol style="list-style-type: none"> 10. If the first sentence is not supported by specific state and/or federal law, why even say it? 12. Support control of predators, negatively impacting special status, candidate, or listed species, along with possible control of other multiple uses that may be seen as conflicting. Predators rarely ever by themselves cause any long-term fatal harm to a species. If there are too many predators then the prey species' numbers dwindle to the point that the predators starve, and their numbers are reduced. And then the prey species' numbers increase. This feed-back loop has been going on for millions of years without humans intervening. It is now much more likely that human activity is responsible for the decline of species because there is no predator-prey feedback loop. So, humans can end up directly or indirectly killing an entire species without humans being hardly affected at all. 	<p>10. This policy is supported by federal law. 12. Comment received and taken into consideration; no changes made.</p>



M. Dudley C.	It would be helpful to have a map showing the location of the two WHMAs in Johnson County.	Link was added to WGFD's online map of WHMAs.
Linda G.	State of Wyoming Migration Corridor Protections, second paragraph: Please double check this in relation to the Governor's fencing projects in the works now.	Checked information and appears to be in relation.
Bighorn National Forest	Page 74, last paragraph; page 75, 1st paragraph. Need to update MIS to Focal Species reflected in our 2016 Administrative Change #4 to the LRMP. Note that the current BNF LRMP still contains "MIS" in chapters with the exception of Chapter 4 Monitoring and Evaluation which uses the term "focal species." "MIS" would be removed throughout the entire LRMP in the next Forest Plan revision and replaced with "focal species" in order to conform to the 2012 Planning Rule.	Language updated from MIS to focal species.
M. Dudley C.	Chronic wasting disease is not limited to mule deer. In fact, chronic wasting disease could have originally been the result of early ranchers mismanaging their domestic cattle herds, which then resulted in the disease spreading to wildlife herds.	Comment acknowledged. CWD research information included in document.
Linda G.	Bighorn National Forest: Please put Table 8 and Table 9 in the appendices after the beginning of the sentence	Updated language in the document for clarity.
M. Dudley C.	The following items should be rewritten or eliminated as follows: 4. The management of non-ESA listed species (e.g., species of concern, species of special concern, or any other non-ESA designation) as though they are protected by the rules of the Endangered Species Act is supported, because there is credible scientific evidence to document a threat to the continued viability of a species population. See page 74. Not supporting such management is both careless and reckless, in light of credible scientific evidence that the continued viability of a species is threatened. Unless of course, you are one of those people who don't believe in science and scientific experts. A court of law would very likely find the item as written to be prejudicial.	Comment received and taken into consideration.



M. Dudley C.	6. Management plans shall be generated to protect the overall health of all natural resources. Use of multiple use principles and management of one individual species may be considered when creating management plans. As noted in 4 above, not supporting such single species management is both careless and reckless when it is known that the continued viability of a species is threatened. 9. This item should be eliminated altogether, see items 4 and 6 above.	Comment received and taken into consideration.
Bighorn National Forest	Page 76, Priority #17 is contradictory to #18 and #20	Language was updated to clarify information.
M. Dudley C.	19. Support research and management of mule deer, white-tailed deer, elk and cattle for reduction of chronic wasting disease. Support research and management of vehicle collisions with wildlife and wildlife migration corridors.	Priority statement added.
M. Dudley C.	11. Create management objectives based on the carrying capacity of the habitat, which could include multiple use mandates (livestock, grazing, mineral extraction, etc.) on federal and state lands. Necessitating consideration of all multiple uses does not give the County any room to negotiate with the Federal Government. Again, being dogmatic is not the way to write a public document. It undermines respect for such a document. There is no reason to exclude state lands from this management.	This document is intended for federal resources through NEPA it is unenforceable on state lands unless there is a federal nexus state lands are avoided to prevent confusion.
Linda G.	Under Resource Assessment: The font changed in the whole paragraph. Please match font to rest of document	Updated language in the document for clarity.



M. Dudley C.	This last sentence of the first paragraph refers to Figure 15 and Figure 16. This reference should actually be to Figure 18 and Figure 19. Also, these two Figures are exactly the same, so you are missing one of the Figures. Furthermore, sentence seven states: "Within the Clear Creek Watershed there are Brown Trout, Rainbow Trout, Cutthroat Trout and Mountain Suckers, ..." These fish are not marked with an "X" in the Clear Creek column of either Figure. Why not? Sentence seven also state: "..., and the Crazy Woman Creek Watershed has Brook Trout, Brown Trout, and Rainbow Trout." These fish are not marked with an "X" in the Crazy Woman column of either Figure. Why not? "The major challenges and limiting factors to supporting sport fisheries within Johnson County are barriers to natural fish migration and inefficient irrigation infrastructure which leads to water shortages during critical periods." This is actually a reason for having in-stream flow requirements or minimums and dam water release requirements or minimums.	This information is the most available from the cited source and therefore was left as is in the document.
Bighorn National Forest	Page 85 is duplicated	Updated map formatting for the section.
M. Dudley C.	1. The County opposes any proposed creation, enlargement, or expansion of the current HMA boundaries and the designation of any additional new HMAs or HAs. On pages 87 and 88 it is stated that there are no HMAs or HAs in the County. If that is correct, then this statement sounds like the County is opposing any new HMAs or HAs and opposing any enlargement or expansion of HMAs or HAs anywhere in Wyoming or the U.S. This is like telling other counties in Wyoming, other states and the Federal Government what they should or shouldn't do. This is really overstepping one's boundaries. Turf warfare anyone?	Updated language in the document for clarity.
M. Dudley C.	Bullet point one should be eliminated because bullet point two is sufficient. Bullet point one is arbitrary and capricious, it gives the County no room to negotiate or maneuver. Again, being dogmatic in a public document is not a smart move if you want the public, other governments and the courts to take this document seriously.	Comment received and taken into consideration.



Linda G.	First paragraph: insert “and” between skiing and off-highway Resource Assessment and Legal Framework, first paragraph: period after opportunities. Please omit “which is essential in the lives of County residents”. Second paragraph, 3rd sentence: insert from instead of in	Updated language in the document for clarity.
Linda G.	Resource Management Objective, first bullet: benefit to benefits	Updated language in the document for clarity.
Bighorn National Forest	Page 90, 1st paragraph, campgrounds should read Hunter, Circle Park, Doyle, Lost Cabin, Middle Fork, South Fork and Tie Hack.	Updated language in the document for clarity.
Mitchell B.	I agree with the plan except for the recommendation of what appears to be "pitting" recreation use against non-sustainable industries such as mineral extraction. All of the uses listed can be over-done and result in negative effects to the land. Proper managers with pertinent information can make good choices for land use and should be allowed to and supported.	Comment received and taken into consideration; no changes made.
Council for the Bighorn Range - Rob D.	Undercutting federal law enforcement on public lands in rural counties will not aide the general welfare of the public or the resources.	Comment received; however, the plan does not undercut federal law enforcement but rather just supports the need for coordination between the local law enforcement and federal enforcement to ensure safety of all citizens.
Council for the Bighorn Range - Rob D.	Unmanaged recreation is the greatest threat to all the resources on our public lands.	Comment received and taken into consideration.
Council for the Bighorn Range - Rob D.	Johnson County should continue to work with the other counties across the range and basin, both with FS and BLM, to allow reasonable fees to control dispersed recreation and recoup specific costs for SAR and emergency medical services.	Outside scope of this document.
Council for the Bighorn Range - Rob D.	Economic dislocation from climate change and civil unrest is going to put additional strains on our public lands. The Counties need to work with federal	Already addressed in plan in policy statement 6.1 Policies 1, 3, &5 and in 6.1 Policies 1 &2.



	law enforcement and recreation managers to mitigate these new issues.	
Bighorn National Forest	Page 90, Priority 6: This section on recreation and tourism should mention Johnson County’s involvement in the dispersed recreation task force, and that the Forest is working jointly with the task force members to come up with viable solutions.	Information was added on the County's involvement in the dispersed recreation task force.
Linda G.	Resource Management Objective or Priorities: Please add continue to work with USDA for cooperative law enforcement on National Forest properties per the Cooperative Law Enforcement Agreement signed by the commissioners in May of 2019.	Updated language in the document for clarity.
Bighorn National Forest	Page 91, Priority #8: what do they mean by coordinate with the county to “ensure resource protection?”	Implying that recreation uses should be managed in a way that protects the natural resources within the county.
Bighorn National Forest	Page 91, Priority 7. There are many special use permits issued annually that include large weddings, filming permits, etc. Do you really want to be a cooperating agency for each one of these permitted activities that have categorical exclusions? Maybe specify the ones that are most concerning such as new assigned sites for outfitter and guides or whatever are the concerning ones...	Priority statement language updated.
Bighorn National Forest	Page 91, 3rd paragraph. Recommend using language from existing MOUs between the county sheriff and Bighorn NF law enforcement at least for Bighorn NF.	Track down MOUs; acknowledge that there is an MOU. Ask Comm. Novotny.
M. Dudley C.	Fourth paragraph, last sentence; “Currently Johnson County does not have a Historic. Preservation Commission to maintain the status of a certified local government.” I would like to see Johnson County have a Historic Preservation Commission.	Not within the scope of this document.
Linda G.	Are Buffalo Main Street Historic District and Main Street Historic District the same thing?	Yes these are the same thing. The SHPO office labels it as the Buffalo Main Street Historic District.
Linda G.	Priorities #2: Please add “the” between for and County	Updated language in the document for clarity.



M. Dudley C.	4. Should be rewritten as follows: Support private property rights as an important consideration for cultural, historical, geological, and paleontological resources thought to be on private lands. Compensation should be paid for land disturbed by cultural, historical, geological, and paleontological digging by governmental entities or non-governmental entities. As written, item 4 is too restrictive and gives too much weight to private property rights. There should be a balancing of private property rights and the public’s right to information on important cultural, historical, geological and paleontological sites.	Comment received and taken into consideration; no changes made.
Linda G.	First paragraph, 6th sentence: change lease to leases Last paragraph, 3rd sentence: remove apostrophe on travelers	Updated language in the document for clarity.
Bighorn National Forest	Page 96, 1st paragraph, last sentence – Livestock grazing statement regarding the “single largest user of public land”. Please add a citation to support this. BLM vs USFS differences.	Updated language in the document for clarity.
Bighorn National Forest	Page 97, Priorities 1 and 2 are unclear. What newly permitted activities? And what do they mean by “impacts to circulating dollars” when access and use of federal land is proposed?	Updated language in #2.
Linda G.	Second paragraph: Please add rankings for cattle too.	Updated language in the document for clarity.
Linda G.	History, Custom, and Culture: Add Era after Pleistocene.	Updated language in the document for clarity.
Mitchell B.	In this section I object to the fact that livestock grazing is held above other interests. Though I firmly believe that large herbivores such as cattle, sheep, horses, and wildlife serve an important part of range ecosystems- there needs to be a balance. The agencies that manage the lands have dedicated, educated professionals that can make the best decisions on the needs of both the ecosystem and the economic interests of grazing permittees. The extremely low rates that are charged for grazing public lands come with management plans that protect the flora and fauna of these lands. It is a choice to graze these lands. Acceptance of the regulations for grazing public lands must be considered before signing a lease.	Comment received and taken into consideration.



	Livestock owners must be aware of "multiple-use" and know that land management needs can change with time.	
Council for the Bighorn Range – Rob D.	If Johnson County wants to desire to inhibit the conversion of arable, productive agricultural lands, then an actual County Land plan with zoning is necessary. It does not hang on the federal land managers.	Specific laws that protect agriculture as a multiple use. Plan does not impact private land.
Council for the Bighorn Range - Rob D.	It has been CBR's experience when attending consultive groups like the BNF Forest Plan Implementation Committee public meetings, one of the first questions from the elected members from the counties to the Forest Service staff present is the condition of their permits-allotments or family recreation concerns. Second is how to boost the AUMS across the Forest to full stocking though only 60% of the Forest is to standard.	Comment received and taken into consideration.
Bighorn National Forest	Page 99 Priorities 5, 7 & 8. For Priority #5, there is a process, that is well defined, under Federal Claims Act for compensable damages. #7 is related to BLM management. The Forest does not have an "application process." On the Forest, we have to conduct NEPA, so six months may not be feasible. #8 is a vague statement. Could you provide more detail, definition, and implication here?	Language updated in all three policy statements for better clarification.
Bighorn National Forest	Page 100, last paragraph. Delete "special use permit" and change to "term grazing permit"	Updated language in the document for clarity.
Bighorn National Forest	Page 101, 1st paragraph, 2nd sentence. USFS Range Improvement Paragraph. Remove "with credits for improvement...grazing fee" portion of the sentence. The permittee assumes responsibility for	Updated language in the document for clarity.



	the improvement (maintenance) but the USFS holds title to the improvement.	
Bighorn National Forest	Page 101. 2nd paragraph, 1st sentence. Add to the sentence related to grazing leases “and term grazing permits.” The USFS does not have grazing leases.	Updated language in the document for clarity.
M. Dudley C.	<p>7. “Allotment retirements are not supported.” No. 7 should be rewritten as follows: Allotment suspension or retirements should be supported when there is significant overgrazing, and the allotment needs time to recuperate.</p> <p>8. “Existing grass banks shall be phased out and retired grazing allotments shall be returned to part of the actively managed grazing system.” Grass banks should be defined because the general public may not know what these are. “Grass banking is a relatively new practice where property owners lease land to ranchers at a discount in exchange for ranchers carrying out conservation-related projects on their pastures. The agreement enables ranchers to stay in business by providing their cattle with fresh sources of grass and their heavily grazed land with a much-needed rest.” No. 8 should be reworded as follows: Existing grass banks shall be supported, and retired grazing allotments shall be returned to part of the actively managed grazing system when the negative effects for which the grazing allotments were retired have been ameliorated. I do not see any reason for favoring returning retired grazing allotments over existing grass banks.</p>	Language was added to better describe grass banks and retired allotments.
M. Dudley C.	9. In part states: “Plans specifically managing for one species are not supported.” This sentence should be eliminated from No. 9. Isn’t this exactly what is being done when grazing (i.e. a euphemism for domestic livestock grazing – largely just cattle) is favored over other management tools for managing grasslands? This sentence could actually be used against “grazing”. And this also goes for other parts of the JCNRMP that state that managing for one species is not supported. Be careful what you argue for because you might just get it in a way you don’t want it!	Comment received. Allotments are managed for multiple use.



M. Dudley C.	<p>16. “The reduction of domestic livestock grazing AUMs to provide additional forage for another species or strictly for conservation purposes is not supported.” Again, just as in No. 9, this statement is actually advocating for a plan to specifically manage for one species (domestic livestock - cattle), which you argue shouldn’t be done.</p> <p>27. States in part: “Post fire grazing will not be limited when unbiased post fire monitoring and evaluation produces relevant, accurate data demonstrating that grazing will not unduly harm the range.” The word “unduly” should be eliminated from this sentence. Domestic livestock shouldn’t harm the range at all. Thus, cattle in any large number on a range will degrade the range, which will harm herds of deer and elk. And sheep are even worse because they will graze grass down to the roots. Again, as in Nos. 9 and 16 you are really advocating for managing for one type of species, namely, domestic livestock.</p>	Comment received and taken into consideration; no changes made.
Bighorn National Forest	Page 102, #5: We were warned about including this statement. Our suggestion is to add the context of that strategy: “...strive to maintain or exceed the current allocation of 113,000 AUMs” while mentioning that this strategy includes the requirement to manage to meet desired conditions.	Updated language in document.
Bighorn National Forest	Page 102 The word shall and must is used throughout these priorities. Suggest changing to “should” or “will continue to”. Also, Priorities 6 and 8 are contradictory, and I don’t think “grass bank” is the term FS uses. The Forest has forage reserves, no grass banks.	Language updated.



<p>Bighorn National Forest</p>	<p>Page 103, Priority #27 - “Grazing rest prescriptions related to either wildfires or prescribed burns will be determined on a site-specific basis. Post fire grazing will not be limited when unbiased post fire monitoring and evaluation produces relevant, accurate data demonstrating that grazing will not unduly harm the range.”</p> <p>Recommend removing or clarifying the intent of “unbiased” in the post-fire monitoring. Specifically, we recommend the addition of the following verbiage to the NRMP: In the event that grazing on federal lands is temporarily suspended due to fire, recommence grazing on the basis of monitoring and site-specific rangeland health determinations rather than solely on fixed timelines. Return livestock grazing 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. Require the use of credible data as previously defined to make these determinations.</p>	<p>Language updated.</p>
<p>Bighorn National Forest</p>	<p>Page 103, Item 29. Due to budget and staffing challenges this could delay turn-on if the federal agencies are not able to collect data. Resting one to two growing seasons after a wildland fire is a BMP that could be considered.</p>	<p>Updated language in priority statement.</p>



Bighorn National Forest	<p>Page 103, Priority #22 - “Agencies shall collaboratively develop and implement rangeland monitoring programs using the template created by the Public Lands Council for all allotments using currently accepted scientifically based monitoring methods and return intervals utilizing properly trained rangeland personnel with an understanding of rangeland and its management to ensure proper collection and analysis of data.”</p> <p>The Bighorn NF and permittees have had the opportunity for collaborative monitoring for decades. Several Wyoming Department of Agriculture Rangeland Health Assessment Program projects have occurred on the Bighorn. Long-term (trend) monitoring and annual (allowable use) monitoring locations and protocols are understood by the Forest and the permittees and can be reviewed and discussed at each annual operating meeting. While the Bighorn NF has never used the PLC template, a variety of other methods are used. Bighorn NF permittees can do their own monitoring, and if the data is collected and submitted per written protocols, it can be included in the allotment record.</p>	The priority statement regarding PLC was not included in the Johnson County NRMP as it was in the Big Horn County NRMP.
Linda G.	Resource Management Objective: add “or eliminating” after reducing	Language added to objective.



<p>M. Dudley C.</p>	<p>3. "Support recognized proactive efforts such as aerial hunting, snares, and leg traps to control predator populations." This item should be rewritten as follows: Support recognized proactive efforts such as hunting to control predator populations. Snares and leg traps are cruel ways to catch predators and cause the predators unnecessary suffering. And aerial hunting can lead to the decimation of a predator population, which then leads to overpopulation in prey species, which then leads to their starvation in the winter months.</p> <p>4. "The County opposes restrictions to current predator control methods." What are the current predator control methods? They should be enumerated. Rewrite this section as follows: The County supports reasonable scientifically based restrictions to current predator control methods.</p> <p>6. "When addressing a decline in sensitive species, predator control shall be employed prior to placing any restrictions on resource-based industries like livestock grazing. Only when predation is determined to not be the cause of decline shall restrictions on the resource industries be considered prior to predator management." This item should be rewritten as follows: When addressing a decline in sensitive species, predator control may be employed as one of the means of addressing such a decline. Restrictions on resource-based industries like livestock grazing may also be employed as a means of addressing such a decline. The underlining assumption in item 6 is that livestock grazing is not the cause of the problem, when in fact it may be the cause of the problem. Once again, the County is really just managing the range for one type of species, i.e., livestock, namely, cattle.</p>	<p>These policies are consistent with WGFD policies and follow the best science for predator control</p>
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M. Dudley C.	10. "The use of M44's or Cyanide bombs for Predator control on public lands should be discouraged, unless properly monitored by the local control board, as it raises the potential of conflicts with recreating public activities and their pets." "Cyanide" is misspelled. It should be Cyanide. M44 should be defined, since the general public won't know what this is (definition in original document). This item should be rewritten as follows: The use of M44's or Cyanide bombs for Predator control on public lands should be illegal. The use of these weapons is totally uncalled for and dangerous. And Cyanide is a poison that can damage and kill humans and animals in small doses.	These policies are consistent with WGFD policies and follow the best science for predator control
Linda G.	Third bullet: You might want to mention the conservation districts' Weed Days on which volunteers pull weeds for the day. Anita will have more information on this.	
Linda G.	5th paragraph, first sentence: insert "takes" between and and their	Updated language in the document for clarity.
M. Dudley C.	10. "The County does not support listing of cheatgrass as a noxious weed." Why doesn't the County consider cheatgrass as a noxious weed? This is not spelled out anywhere in Section 7.4 Noxious Weeds and Invasive Species.	Added clarifying language in background.
Bighorn National Forest	Page 128, Table 8. Focal species include the Northern goshawk.	Updated language in the document.
Bighorn National Forest	Page 129, Table 9. Consider adding the category for each species so the reader can tell what is endangered, threatened, proposed, sensitive, or candidate species.	Category column was added to table.
M. Dudley C.	Tables 1 and 2 are mislabeled. Table 1 should be labeled Table 2 and Table 2 should be labeled Table 1, see pages ix, 20 and 57.	Updated table of contents.



<p>Council for the Bighorn Range - Rob D.</p>	<p>The Council for the Bighorn Range (CBR) wishes to thank the Johnson County Board of County Commissioners for this opportunity to provide comments on the draft Natural Resource Management Plan (August 2020). CBR is a non-profit entity covering the public lands across the range and basins, including Johnson County. The first office for CBR was in Buffalo, and it was incorporated in Buffalo (2016).</p> <p>Rob Davidson started working in Johnson County in the 1970s in oil and gas exploration. In the mid-1980s, settled in Johnson County, first working in-situ uranium mining as a driller, then twenty-two years in pipelines and terminals in Johnson and Sheridan Counties. The last eight years have been as an organizer for the wilderness, the environment, roadless, and public lands in the region.</p>	<p>Comment received and taken into consideration</p>
<p>Council for the Bighorn Range - Rob D.</p>	<p>Concurrent with the passage of the Taylor Grazing Act (1934), more than 93,000 acres of the Bighorn National Forest were recognized and managed as having wilderness characteristics and became the Cloud Peak Primitive Area. It was only one of six in the Rocky Mountain Region (R2) of the USDA-FS. Several large ranches tied to allotments and permits on Federally managed public land have gone under conservation easements to protect land, wildlife, water, and customs and culture.</p>	<p>Comment received and taken into consideration.</p>
<p>Council for the Bighorn Range - Rob D.</p>	<p>The Fish and Wildlife Service (USFWS) is responsible to the Forest Service and BLM for identifying sensitive species. They are also responsible for species covered under the Migratory Species Treaty Act. Johnson County is home to several bird species that travel from Alaska and Siberia or South and Central America that come to breed here. They are essential to the ecosystem here. The Wyoming Game and Fish is responsible across all land for wildlife but works with the USFWS and federal land management agencies through the generations with MOU's</p>	<p>Language added on Migratory Bird Act.</p>



Council for the Bighorn Range - Rob D.	Often, especially across the sagebrush steppe, more than one sensitive species may be involved when the BLM or FS controls work to alter the range. In the BNF Invasive Plant Management and native species plan it calls for the use of herbicides to cull sagebrush stands. The mountain sagebrush provides habitat to four species of sagebrush obligates, not just one.	Comment received and taken into consideration.
Council for the Bighorn Range - Rob D.	The Bighorn National Forest did not amend its Forest Plan to join the more extensive Wyoming Sage-grouse agreement, as did Bridger-Teton, Medicine Bow NF.	Language added to document to clarify this.
Council for the Bighorn Range - Rob D.	The State of Wyoming does manage wildlife on all lands; private, state, Federal. The federal land management agencies manage habitat on public land. The federal land management agencies are not responsible for elk herds moving off USFS lands adjacent to private lands.	Comment received and taken into consideration.
Council for the Bighorn Range - Rob D.	The Council for the Bighorn Range, through FOIA and meeting with Forest Service, and more show \$600k per year leave the Forest from recreation fees while our Bighorn NF suffers in recreation budget compared to other NFs in the region.	Comment received and taken into consideration.
Council for the Bighorn Range - Rob D.	Recreation/tourism is the second biggest economic driver to the County and the state. It is also the only one that pays its way on a timely basis. On Pg. 89 of the NRMP, it stated in 2015, Hunters and anglers contributed \$25.3 million to the economy of Johnson County. According to BEA, in 2015, agriculture, fishing, and logging contributed \$35.7 million to Johnson County GDP. However, if hunting and fishing were tallied with recreation, a more appropriate categorization would have been \$10.4 Million of county GDP, and recreation would have been \$46.1 million of county GDP.	Comment received and taken into consideration.
Council for the Bighorn Range - Rob D.	The socioeconomic profile of Johnson County is unusual with lumping agriculture together with hunting and fishing? This distorts and deflects retail and services and their place in the local economy.	Comment received and taken into consideration.
Bighorn National Forest	All Appendices - Validate that the lists in the appendices are the latest for each agency.	Reviewed and updated.



M. Dudley C.	Wyoming should rename the “Wyoming Game and Fish Commission” to “Wyoming Wildlife and Fish Commission” and rename the “Wyoming Game and Fish Department” to the “Wyoming Wildlife and Fish Department”. Using the word “Game” implies that all wildlife is to be hunted and not protected. “Game” is a loaded word when it comes to conservationists, especially, when the word “wildlife” is used in department and commission documents rather than “game”.	Outside scope of this document.
Council for the Bighorn Range - Rob D.	Johnson County shares the Bighorn Mountains, basins, and range on Federally managed public lands five other Wyoming counties. With the Bighorn National Forest, they include Sheridan, Big Horn, and Washakie counties. With the Bureau of Land Management, the reach includes Sheridan, Campbell, Washakie, and Natrona Counties. Each of these counties has a unique history. Only at the northwest extent of Johnson County do the boundaries come close to representing the topography of the landscape. As noted in the history section of the NRMP, the boundaries are a creature of politics and power, not a landscape. Consistent with Wyo. Stat. § 9-4-218(a)(viii)(D), the County developed this plan in public meetings in accordance with Wyo. Stat §§ 16-4-401 through 16-4-408, allowing for participation and contribution from the public.	Comment received and taken into consideration.
Council for the Bighorn Range - Rob D.	Any comprehensive plan does not cover seventy percent of the Johnson County. Currently, both the Bighorn National Forest (BNF) NF and the Bureau of Land Management (BLM) have comprehensive plans for the federal public lands they manage. Johnson County elected officials, including Commissioners and Conservation District personnel, were part of the planning efforts for these comprehensive plans such as the Forest Plan Steering Committee for the Bighorn National Forest. The BLM has a very comprehensive "cooperating agency" system.	Comment received and taken into consideration, the scope of this plan is only for federal lands and those lands affected by federal decisions.
Council for the Bighorn Range - Rob D.	CBR cannot support the micro-management of the public resource at the individual county level. That management is what is called for under section 7.2.	Federal law allows counties to participate in the management of federal lands.



M. Dudley C.	I have often found it the case that the recreational industry supplies many more tax dollars and employs many more people than extractive industries do and that the recreational industry does far less damage to public and private lands than the extractive industries do. And the taxpayers are left with high clean-up bills for the extractive industries due to bonding for these projects being totally inadequate.	Comment received and taken into consideration.
Jacquelyn W.	The Objectives and the Priorities that follow each section are informative but might be more meaningful if they included examples of concrete issues Johnson County is grappling with. This could add strength to the Priorities by identifying any existing or potential hotspots unique to Johnson County. In other words, clarify what the administrative and public groups need to focus on.	The background sections are intended to provide this specific information if available along with information on the legal aspects of the resource.
Bighorn National Forest	All Pages - Recommend removing “shall” and “must” and any statement that appears to direct authority over USFS-managed lands throughout the NRMP objective. Some priority statements seem to direct rather than encourage cooperation of land management (see attached comments in Markup of NRMP for examples). We recommend selecting a consistent and appropriate set of terms such as “should coordinate” to imply that cooperative land management would occur. These terms are already used in other priority sections of the NRMP.	Language was changed where appropriate. Those priorities that say shall or must have a federal law making such requirements mandatory.

