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Regina Plettenberg, CLERK AND RECORDER
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Return: Commissioners

RESOLUTION NO. 4729

A RESOLUTION TO ADOPT THE UPDATED NATURAL RESOURCE MANAGEMENT PLAN RESCINDING RESOLUTION NO. 2978, DATED NOVEMBER 21, 2012

WHEREAS, on November 21, 2012 the Ravalli County Board of Commissioners adopted Resolution No. 2978, establishing the Ravalli County Natural Resource Use Plan; and

WHEREAS, on August 22, 2024 the Ravalli County Board of Commissioners approved a variance to the County Purchasing Policy and awarded DJ&A with the contract to update the 2012 Natural Resource Use Policy (recorded document #799233); and

WHEREAS, on December 05, 2024 the Ravalli County Board of Commissioners created and approved a Core Review Group; and

WHEREAS, the Ravalli County Board of Commissioners met with the Core Review Group on January 06, 2025 and January 27, 2025; and

WHEREAS, on February 10, 2025 the Ravalli County Board of Commissioners reviewed and approved the Action Items time line presented by DJ&A; and

WHEREAS, on February 12, 2025 the Ravalli County Board of Commissioners approved the placement of a the Public Service Announcement on the Ravalli County Website inviting the public to complete a short survey from March 18, 2025 through April 09, 2025 ; and

WHEREAS, on March 18, 2025 the Ravalli County Board of Commissioners held the first public meeting to receive public comment; and

WHEREAS, on June 10, 2025 the Ravalli County Board of Commissioners held the second public meeting to receive public comment; and

WHEREAS, on August 11, 2025 DJ&A provided a final draft to the Ravalli County Board of Commissioners; and

WHEREAS, the Ravalli County Board of Commissioners scheduled a public meeting for September 15, 2025 at 11:00 AM for discussion and review with possible approval of the updated Natural Resource Management Plan.

NOW, THEREFORE BE IT HERBY RESOLVED, that the Ravalli County Board of Commissioners hereby adopt Resolution No. 4729, adopting the updated Ravalli County Natural Resource Management Plan, previously known as the Natural Resource Use Policy be approved and adopted this 15th day of September, 2025.

BOARD OF RAVALLI COUNTY COMMISSIONERS

Dan Huls, Chairman

Greg Chilcott, Member

Jeff Burrows, Member

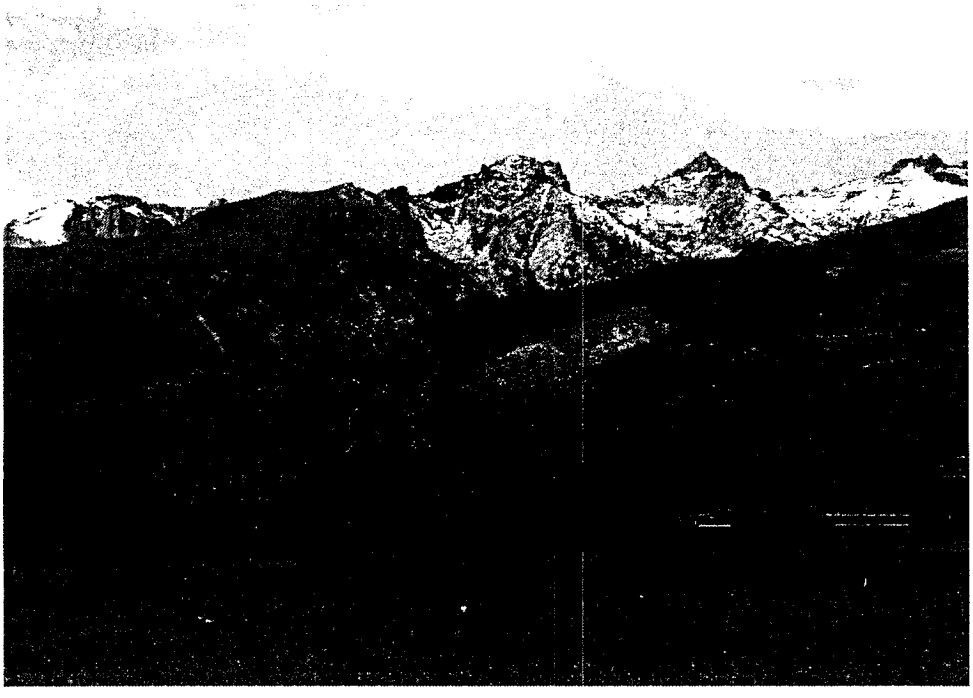
ATTEST: Regina Plettenberg
Clerk & Recorder
By: Sarah Mills, Deputy

SEAL OF RAVALLI COUNTY STATE OF MONTANA

Ravalli County, Montana

Ravalli County Natural Resource Management Policy

Adopted September 15, 2025



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Approvals

Dan Huls
Ravalli County Commissioner, Chairman

9-16-25
Date

Jeff Burrows
Ravalli County Commissioner, Vice Chairman

15 Sept 2025
Date

Greg Chilcott
Ravalli County Commissioner

9/15/25
Date

Contents

Introduction

The Ravalli County Natural Resource Management Policy (also referred to as "this policy" or "this document") serves as the basis for communicating and coordinating with the federal government, state government, and their agencies on land and natural resource management issues that impact the local area and economy. Understanding that rural counties can be strongly impacted by federal and state land management decisions on lands located within or adjacent to the county, local governments can ensure that local policies and concerns are meaningfully considered by federal and state agencies by formally adopting a natural resource management policy.

This policy replaces the 2012 Bitterroot Valley Natural Resource Use Policy (Ravalli County). This updated document incorporates many objectives and policies from the 2012 policy that relate to public land use and management. In addition to resource management objectives and strategies, this document also evaluates the current condition of a variety of natural resources, both qualitatively and quantitatively. Data and information presented in these resource assessments use federal, state, and local publicly available data sources and meet, at a minimum, Information Quality Act guidelines.

While local governments do not have jurisdiction over the federal or state government or the lands they manage, various statutes dictate the requirements and parameters for how agencies engage with local entities during decision-making processes. The National Forest Management Act (NFMA) requires that U.S. Forest Service (USFS) land and resource management plans be "coordinated with the land and resource management planning processes of State and local governments..." (16 USC § 1604(a)). NFMA also requires that the Forest Service give "local governments and the public adequate notice and an opportunity to comment upon the formulation of standards, criteria, and guidelines applicable to Forest Service programs" (16 USC § 1612(a)).

Counties are particularly well suited to understanding the impacts that federal land management decisions may have on the local economy, customs, and culture. This is recognized by several federal statutes and regulations that govern land and natural resource management. Because nearly three quarters of Ravalli County's land base is managed by the USFS as part of the Bitterroot National Forest (BNF), USFS land management decisions are particularly important to the county's values and economic stability.

Purpose and Intent of this Policy

The purpose of this document is to articulate the customs, culture, and natural resource values of Ravalli County; identify resources and land uses that economically or culturally affect the stability and character of the county; recognize the importance of local involvement in federal and state decision-making pertaining to natural resource management on federal and state lands; and provide guidance to the Ravalli County Board of County Commissioners (Board).

Montana counties have a fundamental interest in federal and state lands within and adjacent to their county. Many aspects of the environmental and socioeconomic health and wellbeing of the local government and citizens are related to goods and services provided by federal and state lands. Per Article XI of the Montana Constitution, Ravalli County is a local government with general powers. As such, the county has "legislative, administrative, and other powers provided or implied by law" (Article XI, Section 4(1)(b)), and such powers "shall be liberally construed" (Article XI, Section 4(2)). Under its current structure, the Board wields these powers on behalf of the county in accordance with Section 7-5-2101 of the Montana Code Annotated (MCA). The Board is charged with governing Ravalli County in the best interest of all its citizens. It is the policy of Ravalli County to use its status as a local government to proactively participate in federal and state land management planning processes and National Environmental Policy Act (NEPA) projects.

NEPA, NFMA, and the Federal Land Policy and Management Act of 1976 (FLPMA) all encourage and provide for public processes, with special attention given to local governments. As a local government, Ravalli County is given special consideration with regard to planning on federal and state lands within its jurisdiction under this framework. As duly elected representatives, locally elected county commissions represent a range of interests. This policy document represents public input and values related to natural resource planning.

In adopting this natural resource management policy, the Board intends to:

- Protect the integrity of environmental systems and natural resources;
- Preserve and enhance resource-based industries;
- Promote a robust, diverse, and stable local economy;
- Minimize conflicts among land uses;
- Protect public health, safety, and welfare;
- Preserve the county's culture, customs, and heritage; and
- Recognize and protect private property rights and interests in federal and state land resources including rights-of-way and public access, grazing permits, water rights, special-use permits, leases, contracts, and recreation use permits and licenses.

The Board also acknowledges that comprehensive and responsible management of local natural resources requires equal effort and participation of all parties involved, including local, state, and federal agencies. In order to encourage this relationship, the Board 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 issues to discuss.

- Transmit a copy of this policy to state, regional, and local federal agency offices doing business within the county for their consideration as part of any consistency review that is required pursuant to federal statutes.
- Contact the USFS, Montana Department of Natural Resources and Conservation (MT DNRC), and Montana Department of Environmental Quality (DEQ) offices to determine a protocol for informal communication that should occur so that each is apprised of issues and concerns as early as possible.
- Review NEPA documents to determine if it is appropriate to seek "cooperating agency status" and consider entering into Memoranda of Understanding (MOU) or Memoranda of Agreement (MOA) for all NEPA-related projects and planning document revisions and amendments affecting federal lands in Ravalli County. The County reserves the right to negotiate an MOU or MOA on a case-by-case basis, recognizing that these are not appropriate or necessary in all cases.

Legal Framework

U.S. Constitution

The U.S. Constitution and the laws of the United States are "the supreme Law of the Land" (U.S. Const. Art. VI). The Constitution forms the foundation on which all laws (statutes) are based. States and local governments are free to make their own laws, but those laws cannot conflict with federal laws or the U.S. Constitution.

The Constitution mentions land and property in a few places. Article I, Section 8 grants Congress the power to make rules for the government and regulation of land. Article IV, Section 3 grants Congress the power to make all needful rules and regulations respecting the territory or other property of the United States. The Fifth Amendment to the Constitution makes clear that no person shall be deprived of property without due process of law, nor shall private property be taken for public use without just compensation.

Federal Statutes and Regulations

Federal statutes provide opportunities for counties to share their special expertise with federal agencies during decision-making processes to ensure potential impacts on local communities are fully considered. Such local impacts could be direct or indirect and include impacts to the economy, culture, tax base, private property, and public land access and use. Local natural resource management plans and policies, such as this document, serve as the foundation for local government involvement in these federal processes. Specifically, federal laws require federal agencies, including the USFS, to consider state and local land use plans and explain deviations from these plans in decision documents as described below.

National Environmental Policy Act

NEPA requires federal agencies to study, understand, and make public the environmental consequences of "major federal actions significantly affecting the quality of the human

environment" (42 USC § 4332(C)). When articulating the purpose of NEPA in Section 101 of the statute, Congress

> *declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments...to use all practicable means and measures...to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.*

Here, Congress makes it clear that the overall purpose of NEPA is not just about protecting the environment, but to do so in a way that considers long-term social and economic conditions. In order to help fulfill this mandate, NEPA includes multiple provisions that provide opportunities for local governments to participate in the NEPA process and ensure that local social and economic concerns are duly considered.[1]

With respect to a proposed agency action, the lead agency may designate a "local agency that has jurisdiction by law or special expertise with respect to any environmental impact involved" to serve as a cooperating agency" (42 USC § 4336a(a)(3)). A local agency "substantially affected by the lack of a designation of a lead agency with respect to a proposed agency action...may submit a written request for such a designation (42 USC § 4336a(a)(4)). A local agency's status as a cooperating agency means that the lead agency must give consideration to any analysis or proposal created by the agency when preparing an environmental document (42 USC § 4336a(a)(2)(C)). Local agencies may also serve as a joint lead agency (42 USC § 4336a(a)(1)(B)).

By adopting a local natural resource plan or policy, a county (1) enhances the likelihood that local policies are considered during federal planning processes, and (2) demonstrates the special expertise required for participation in the NEPA process as a cooperating agency.

While the *statutory* provisions discussed above remain the same, NEPA's *regulations* have undergone recent significant changes. The Council on Environmental Quality (CEQ) promulgated regulations that interpreted the statute and added details to make Congress' law implementable. These regulations were broadly applicable to all federal agencies, and agencies were allowed to draft agency-specific regulations provided they were consistent with CEQ's regulations. A recent EO rescinded CEQ's NEPA regulations, previously located at 40 CFR Part 1500, which provided many more tools and requirements for local agency involvement and consideration. The same EO ordered agencies to write, or rewrite, agency-specific NEPA

[1] NEPA's implementing regulations (previously found at 40 CFR § 1500 et seq.) were rescinded, effective April 11, 2025. These regulations contained several additional and more specific requirements for local government involvement in the NEPA process. Legal challenges or future administrations may bring these regulations back, but at this time they are not in effect.

regulations that are consistent with the administration's policy goals. At the time this document was prepared, the USFS had not yet revised its NEPA regulations.

Forest Service Organic Act

The Forest Service Organic Act, or Organic Administration Act of 1897, is the original Act that authorizes the Forest Service to manage the occupancy and use of national forests. The Act specifically identifies two primary purposes of forest reservations: "securing favorable conditions of water flows, and to furnish a continuous supply of timber."

Multiple-Use Sustained-Yield Act

In the Multiple-Use Sustained-Yield Act of 1960 (MUSYA), Congress formally recognized nontimber values of national forest lands that were not previously recognized in the Organic Act. Specifically, the Act recognizes values associated with "outdoor recreation, range, timber, watershed, and wildlife and fish purposes." The Act does not assign relative importance to these resources and defines "multiple use" as follows:

> *The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.* (16 USC § 531(a))

MUSYA explicitly authorizes the Secretary of Agriculture to "cooperate with interested State and local governmental agencies and others in the development and management of the national forests" (16 USC § 530).

National Forest Management Act

Sixteen years after passing MUSYA, Congress passed the NFMA to better balance timber management with other resources and environmental protection on national forests. The NFMA requires the USFS to write land and resource management plans for every unit of the National Forest System (NFS) and to revise such plans at least every 15 years. The NFMA establishes a tiered approach to planning where each successive step is more detailed and consistent with the provisions at the previous level. Under this framework, the USFS develops national-level NFMA regulations based on the statute to guide unit-level planning efforts; the most recent version of which is known as the 2012 Planning Rule (36 CFR Part 219). Planning units (e.g., national forests) then develop land and resource management plans pursuant to the regulations. These plans make zoning and suitability determinations for different areas

throughout the planning unit. Site-specific projects and actions undertaken by the USFS must be consistent with the plan. This tiered approach is shown below.

NFMA

2012 Planning Rule (Regulations)

Land and Resource Management Plan

Projects and Activities

NFMA and its regulations provide opportunities for local government and public involvement in the development of land and resource management plans. Specifically, NFMA requires that the USFS coordinate the planning process with "the land and resource management planning processes of State and local governments and other Federal agencies" (16 USC § 1604(a)). While the USFS is not required to comply with state and local plans, a final decision document must contain results of a review of local plans, including consideration of objectives, the compatibility and interrelated impacts of USFS plans and local government policies, opportunities to contribute to common objectives, and ways to reduce conflicts between a forest plan and local policies (36 CFR § 219.4(b)(2)). Plans must also include "components, including standards or guidelines, to guide the plan area's contribution to social and economic sustainability" (36 CFR § 219.8(b)).

This statute and its regulations are particularly important to Ravalli County given the upcoming plan revision process for the BNF.

Other Relevant Regulations and Guidance

Federal departments and agencies will occasionally develop their own regulations to further define how statutes are to be implemented, and they will also issue additional guidance on top of the requirements contained in statutes and regulations. This additional guidance typically takes the form of agency manuals and handbooks, but also includes executive orders (EOs), secretarial orders, and other policies. In general, regulations are requirements that carry the force of law, and directives (orders, manuals, handbooks, and other policy) constitute guidance that is to be followed unless the agency can provide a compelling reason to deviate from that guidance. Relevant components of these additional regulations and directives are summarized and discussed below.

In the current national political environment, regulations and directives are prone to periodic changes based on the party in power. Directives can change as quickly as an incoming president can issue a new EO. Regulatory changes require a much lengthier process that requires public involvement. The regulation and policy information contained in this document is current as of the time it was prepared.

Executive Order 13352

The purpose of EO 13352, *Facilitation of Cooperative Conservation* is to ensure that the departments responsible for natural resource management "implement laws relating to the

environment and natural resources in a manner that promotes cooperative conservation, with an emphasis on appropriate inclusion of local participation in Federal decision making."[2] The EO requires that the Secretaries of the Interior and Agriculture and the EPA Administrator carry out programs, projects, and activities in a manner that:

i. *facilitates cooperative conservation;*

ii. *takes appropriate account of and respects the interests of persons with ownership or other legally recognized interests in land and other natural resources;*

iii. *properly accommodates local participation in Federal decision making; and*

iv. *provides that the programs, projects, and activities are consistent with protecting public health and safety."*

Forest Service NEPA Regulations

NEPA regulations specific to the USFS are codified at 36 CFR Part 220. These regulations are consistent with NEPA and serve to supplement and add clarification to the Act. USFS NEPA regulations reinforce public and agency involvement in planning processes and require the development and maintenance of a *schedule of proposed actions* (SOPA) that is publicly available and up to date. The SOPA is a document that informs the public about proposed and ongoing USFS NEPA actions and identifies a point of contact for additional information. These regulations also list the categories of actions for which categorical exclusions (CE) may be used by the USFS (36 CFR § 220.6). This is important because opportunities for local involvement are not as robust for CEs as they are for other NEPA classes of action.

On January 20, 2025, EO 14154 ordered agencies, including the USFS, to revise their NEPA implementing regulations to align with the current administration's policy goals. While this has not yet occurred, existing USFS NEPA regulations will be rescinded soon, and new regulations are expected to follow.

Forest Service Manual

The Forest Service Manual (FSM) provides high-level guidance for USFS line officers and primary staff. The following FSM sections, available online,[3] are potentially relevant to this document:

- 1910 – Natural Resource Planning
  - The renewable resources program shall examine the "net social and economic contributions to the Nation's well-being with due consideration given to the regional and local benefits derived" (FSM 1913.03).
- 1920 – Land Management Planning

[2] Exec. Order. No. 13352, 69 Fed. Reg. 52989 (August 30, 2004), <https://www.federalregister.gov/documents/2004/08/30/04-19909/facilitation-of-cooperative-conservation>

[3] https://www.fs.usda.gov/im/directives/dughtml/fsm.html

  - It is the agency's policy to "[e]ncourage participation by Federal, State, and local agencies, and Tribes, as well as the public, and consider their public input in the planning process" (FSM 1920.3).
  - The USFS must "ensure that new or revised plans provide for ecological sustainability and contribute to social and economic sustainability, and must...[u]se available information pertaining to social and economic systems when developing plan components to contribute to social and economic sustainability" (FSM 1921.03).
- 1950 – Environmental Policy and Procedures
  - It is the policy of the USFS to "give timely notice to...local governments...of the availability of environmental and accompanying decision documents," and to make those documents freely available (FSM 1950.3).
- 1970 – Economic and Social Analysis
  - When conducting economic analysis, "consider all relevant benefits" and "use appropriate local values compatible with other benefit and cost estimates if available" (FSM 1971.5).
- 2000 – National Forest Resource Management

Policies directly applicable to local involvement and considerations are listed above. Each of the listed FSM sections could contain additional information relevant to the county as it becomes involved with, or comments on, specific USFS projects or actions.

Forest Service Handbook

The Forest Service Handbook (FSH) complements the FSM and generally provides more specific guidance for technicians and specialists. The following FSH sections, available online,[4] are potentially relevant to this document:

- 1909.12 – Land and Resource Management Planning Handbook
  - The general steps for revising plans include "[r]eviewing the land use policies of federally recognized Indian Tribes, Alaska Native Corporations, other Federal agencies, and State and local governments" (21.11).
  - The responsible official should understand local customs and culture, possibly conflicting public interests, and the broad range of public values (21.12).
  - The USFS is to leverage local expertise throughout the planning process.
  - Part 22.32 makes clear that USFS planners need to develop an understanding of the ecological, social, and economic context that surrounds the plan area and take this into consideration during the plan revision process. This point is reiterated throughout the handbook as it related to individual resources.
  - "In providing opportunities for engagement, the responsible official shall encourage participation by local governments (42.1).

[4] https://www.fs.usda.gov/im/directives/dughtml/fsh.html

  - Part 44 further explains the importance of local government involvement in planning processes.
- 1909.14 – Resource Inventory Handbook
  - This handbook describes how natural resources are inventoried across the National Forest System.
  - Reference this handbook if a deeper understanding of inventory processes, standards, and guidelines is needed.
- 1909.15 – Environmental Policy and Procedures Handbook
  - This handbook largely reiterates regulatory requirements.
  - Part 11.31b states that when local agencies decline cooperating agency status, they should still be considered for inclusion on the on the interdisciplinary team.
- 1909.17 – Economic and Social Analysis Handbook
  - Economic analyses should take into account local values and local economic impacts.
  - In defining the impact area for economic analyses, Part 24 counties as the "basic geographic unit" of analysis as these are typically the smallest areas for which substantial and consistent economic information is available."
  - Chapter 30 of this handbook concerns social impacts and how they are evaluated. The opening paragraph of this section acknowledges that "[c]hanges in the availability or in the permitted uses of forest resources can be of great importance to residents of affected communities," and the chapter outlines how USFS personnel are to conduct social impact analyses.
  - Part 32: If a proposed action "could have a significant effect on the quality of the human environment... a detailed social impact analysis is mandatory."
  - Per Part 33, social analyses are to consider local lifestyles; attitudes, beliefs, and values; social organization; population characteristics; land-use patterns; and civil rights.
- 2000 – National Forest Resource Management
  - This handbook contains detailed guidance on the management of forest resources.
  - When engaging in or commenting on specific proposed actions, it may be helpful to understand resource-specific management guidance.

State and Local

Most of the state lands within Ravalli County are managed by the MT DNRC or Montana Fish, Wildlife, and Parks (MT FWP). State actions tend to be subject to the Montana Environmental Policy Act (MEPA), which shares many similarities with NEPA. Because the amount of state land relative to the amount of federal land within Ravalli County is quite small, the state-specific legal framework is not summarized in this document.

Several existing policies and guidance documents related to Ravalli County's natural resources already exist. The purpose of this policy is not to duplicate these efforts, but to incorporate and build upon them. Relevant documents include, but are not limited to:

- Ravalli County Community Wildfire Protection Plan (2024)[5]
- Montana Western Region Hazard Mitigation Plan – Annex O: Ravalli County (2025)[6]
- Montana Forest Action Plan (2020)[7]
- Montana's State Wildlife Action Plan (2015)[8]
- Montana Statewide Fisheries Management Plan (2023-2026)[9]

The county's objectives and strategies presented in this document are consistent with federal and state law, but they may not be consistent with existing policies or management plans as the goal of this document is, in part, to help shape and steer such policies and plans.

Organization

This plan considers the current conditions of natural resources within the county, county objectives for each resource, and what the county can do to see those objectives achieved. For each resource included in Chapters 3 through 9, this plan addresses the following:

- **Resource Assessment.** Each resource assessment includes background and detailed information on the resource, including qualitative as well as quantitative information. Assessments typically include an evaluation of the importance of the resource to the county; a description of the location, quality, and size, of the resource; and a map of the resource, where appropriate. Resource assessments rely on the best data available at the time of publication. No new data was collected as part of the assessments. Resource assessments address the question, "What is the state of the resource now?"

- **Resource Management Objectives.** Resource management objectives describe the county's general goals for the resource in the form of broad policy statements regarding the use, development, and protection of each resource. Where applicable, objectives are stated in measurable terms and include tangible metrics. This may include quantifiable goals and timelines. Resource management objectives address the question, "What does the county want for and from this resource?"

- **Strategies**. Strategies describe how the county plans to achieve the resource management objectives for each resource. Strategies tier to resource management objectives for each resource and address the question, "How can the county act to see its objectives achieved?"

[5] https://ravalli.us/DocumentCenter/View/8778/2024-Ravalli-County-CWPP
[6] https://ravalli.us/DocumentCenter/View/3142/Final-Draft-Hazard-Mitigation-Plan
[7] https://dnrc.mt.gov/_docs/forestry/Montana_Forest_Action_Plan_12.22.2020.pdf
[8] https://fwp.mt.gov/binaries/content/assets/fwp/gisresources/docs/swap/70169.pdf
[9] https://fwp.mt.gov/conservation/fisheries-management/statewide-fisheries-management

Process

The county convened a Core Team (CT) to guide the update process for this policy document. The CT consisted of representatives from the county, Ravalli County Economic Development Authority, Bitterroot Resource Conservation and Development, USFS, MT DNRC, and DJ&A. DJ&A, a Missoula-based consultant, was hired by the county to guide the process and lend policy and natural resource expertise. DJ&A provided recommendations, but did not otherwise participate in decision making within the CT. The CT met several times over the course of about eight months (January 2025 – August 2025) to discuss various aspects of the document.

The public was provided with two opportunities to participate in the process. The first public participation opportunity was held to gather information and opinions about natural resources and the management objectives the public would like to be included in the policy document. To solicit input, a public meeting was held in Hamilton on March 18, 2025, to explain the update process and public involvement opportunities. A questionnaire was made available for three weeks following the meeting for members of the public to solicit formal, written input. The questions and a summary of the survey results are provided in Appendix A: Survey Questions and Response Summary.

The second public participation opportunity was held to solicit public input on the draft policy document. A public information meeting was held in Hamilton on June 10, 2025, to explain the draft document and inform the public that they had 30 days to review the document and provide feedback to the CT. During the comment period, the County received 14 submissions containing 92 substantive comments. Following the comment period, the CT and County Commissioners reviewed and discussed each substantive comment submitted during the comment period. This resulted in several changes and improvements as the document progressed from the draft to final version.

Both public involvement opportunities were advertised in advance of the meeting date. Input received was reviewed and considered by the CT and incorporated into the final document where deemed appropriate by the CT. The final document was then reviewed by the Board prior to final adoption.

Updating the Plan

The Ravalli County Natural Resource Management Policy should be updated periodically. The frequency of updates should be guided by the rate of change of resource conditions, availability of new information, and the demographics and values of the community to ensure the policy remains applicable and relevant. Under normal conditions the plan should be updated about every 10 to 12 years.

Chapter 1: Customs and Culture

Overview

Culture is defined as the customary beliefs, social forms and material traits of a racial, religious, or social group (Merriam-Webster 2020a). Custom is a usage or practice common to many or to a particular place or class or habitual with an individual (Merriam-Webster 2020b). Both the customs and culture of Ravalli County have been shaped by the community's combined values and activities unique to the area. Over time, the county's customs and culture will continue to change and grow, creating a rich cultural landscape which reflects the county's past, present, and future. Protecting Ravalli County's way of life and the quality of life of its residents is an important topic for consideration and one that is considered through conscientious land use planning.

Ravalli County is notable for its extensive public lands, comprising 75% of the county, most of which is part of the BNF. Surrounded by the Bitterroot Range to the west and the Sapphire Range to the east with the fertile Bitterroot Valley between, wild and open space within the county is the foundation for many prevalent values that connect all who live in or visit the area. Traditional land uses and associated values are intrinsically tied to the open spaces for which the county is known and have shaped the customs and culture of the area. Prominent values associated with federal and state lands within the county are connected with recreational activities (e.g., hiking, camping, hunting, fishing, trapping, wildlife watching, skiing, and snowmobiling) and commercial activities (e.g., forestry/logging, grazing, mining, guiding, and tourism).

Prior to colonization the Bitterroot Valley was home to the indigenous Salish people for nearly 5,000 years. Other indigenous tribes also passed through the valley, including the Shoshone, Nez Perce, Pend d'Oreille, Kalispel, and Kootenai (Ravalli County Museum and Historical Society). The Lewis and Clark expedition reached the area in 1805 and in the following decades Euro-American settlers arrived, including fur trappers, hunters, miners and prospectors, missionaries, and other settlers. The discovery of gold in the late 1800's and the arrival of the Northern Pacific Railroad spurred rapid change and development in the valley. Agriculture and lumber operations supported development in the valley and surrounding towns, as well as the infrastructure for mining operations across southwestern Montana (Ravalli County Museum and Historical Society). Over the last three decades, the pattern of declining federal timber harvests and the associated reduction of local timber-processing infrastructure has resulted in significant economic implications for Ravalli County (Barkey et al. 2018). Today, Ravalli County maintains the values upon which it was built, those of a community invested in the land and the resources it provides. While dominant uses may be shifting, continued access to and use of those lands remains an integral component of the customs and culture of the area.

Current Values – Public Survey Results

A public survey was conducted for three weeks (March 18, 2025 to April 9, 2025) to better understand (1) public values associated with the various resources and opportunities provided

by federal- and state-managed lands, and (2) public perceptions of what industries are most impacted by natural resource management decisions. The survey was available through the county website and advertised by the county. The launch of the survey coincided with an informational public meeting where participants received instructions for how to participate in the survey and were encouraged to do so. The survey was conducted to gain insight into the values and perspectives of county residents and does not necessarily convey a representative cross-section of the population.

The survey received 123 responses. Respondents generally demonstrated higher values associated with personal enjoyment of public lands and natural resources and overall ecosystem health and placed less value on activities associated with commercial use. The questions included in the survey and a summary of survey responses are included in Appendix A.

Chapter 2: Socioeconomics

Demographics

Ravalli County is Montana's seventh most populated county with a population density of 19.1 residents per square mile. Between 2010 and 2023 Ravalli County experienced moderate population growth, increasing from 40,013 to 45,807 residents (14.5%). This was nearly the same as the state growth rate (13.5%) but higher than the national growth rate (9.4%)(Headwaters Economics 2025b). The U.S. Census Bureau estimated the population in 2023 at 47,738 residents. The median age for the county in 2023 was 48.5 years, which is older than both the median ages for Montana (40.2 years) and the U.S. (38.7 years).

In 2023, the median household income for Ravalli County was $71,323. This level of income was 2% above the median household income for Montana and 9% below the median household income for the U.S. At 3.1%, the county's 2023 unemployment rate was slightly higher than Montana's unemployment rate (2.9%) and lower than the U.S. unemployment rate (5.1%).

Education is often correlated with the capacity and resiliency of a community and its ability to respond to economic changes. Generally, jobs that require higher levels of education and skill pay higher wages than jobs that require fewer skills and less education. An educated workforce is a primary consideration of companies when locating new facilities. An increasing number of industries require some sort of training or education beyond high school. Table 1 details the education levels for Ravalli County residents 25 years and over, compared with statewide averages (Headwaters Economics 2025b). Overall, the county's education level is close to but slightly lower than the state's.

Table 1 Education Levels of Ravalli County Residents Compared to Montana Residents

Population 25 years and over	**Ravalli County**		**Montana**	
No high school degree	2,331	6.7%	41,822	5.4%
High School degree	32,206	93.3%	728,613	94.6%
Associate's degree	3,500	10.8%	74,782	9.7%
Bachelor's degree or higher	10,286	29.8%	266,066	34.5%
Graduate or professional	3,780	10.9%	90,134	11.7%
Total	**34,537**	**100.0%**	**770,335**	**100.0%**

Federal and state land management decisions can disproportionately impact populations at risk. Populations at risk are more likely to experience adverse social, health, and economic outcomes due to their wealth, income, race, age, gender, and other socioeconomic measures. These impacts could be adverse or beneficial, depending on the specific project setting and the

specific actions being implemented. Poverty rates in Ravalli County (8.3%) are lower than state (12%) and national (12.4%) rates (Headwaters Economics 2025b).

Industries and Economics

The economy of Ravalli County has historically been tied to the availability and management of natural resources. Agricultural pursuits, timber harvesting, and wood products have been a mainstay of the economy since the mid-19thcentury, however over the last few decades growth in the services and retail industries has far outpaced those that rely directly on natural resources (Headwaters Economics 2025b). For this analysis, industries are organized according to three major categories: non-services related, services related, and government. Non-services related jobs include those on farms and in other agricultural industries, forestry, fishing, outfitting, mining, construction, and manufacturing (including forest products). Services related jobs include employment in retail trade, finance, insurance and real estate, and other services; and government jobs include federal, state and local government employment and enterprises. All data have been compiled using credible public data sources and are adjusted for inflation.

Between 2001 and 2022, the number of services related jobs increased by 53%, while non-services related jobs grew by 8% and government jobs grew by 3% (Figure 1).

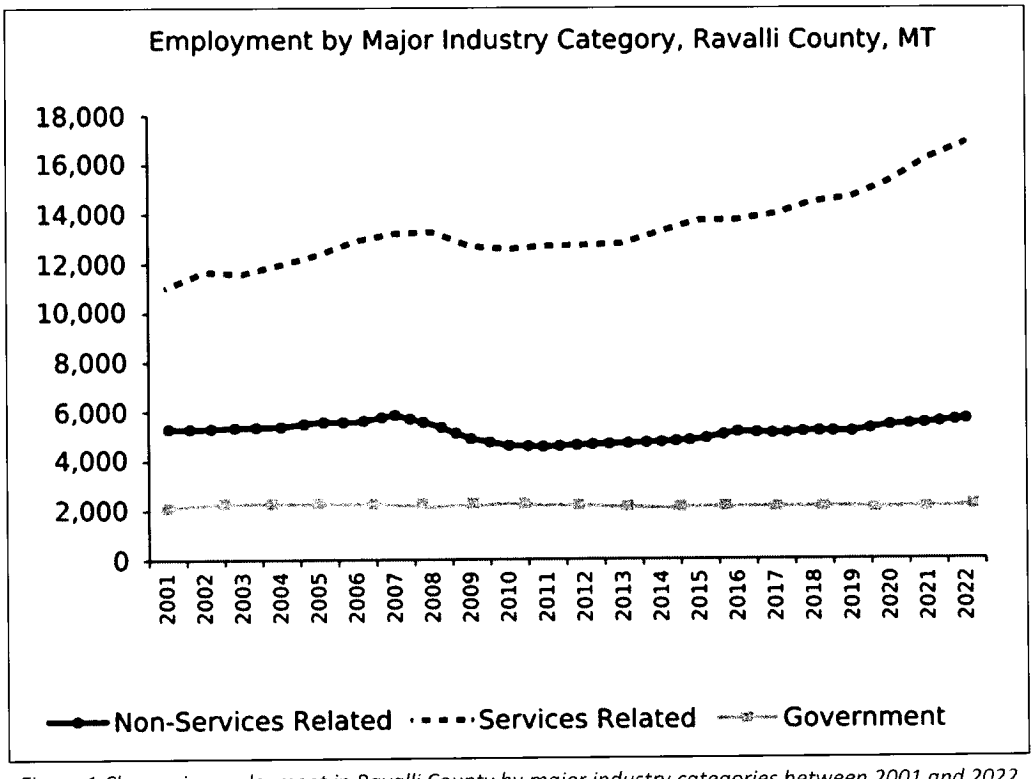

Figure 1 Change in employment in Ravalli County by major industry categories between 2001 and 2022

From 2001 to 2022, earnings in services related industries grew by 105%, non-services related industries grew by 14%, and government earnings grew by 31% (Figure 2).

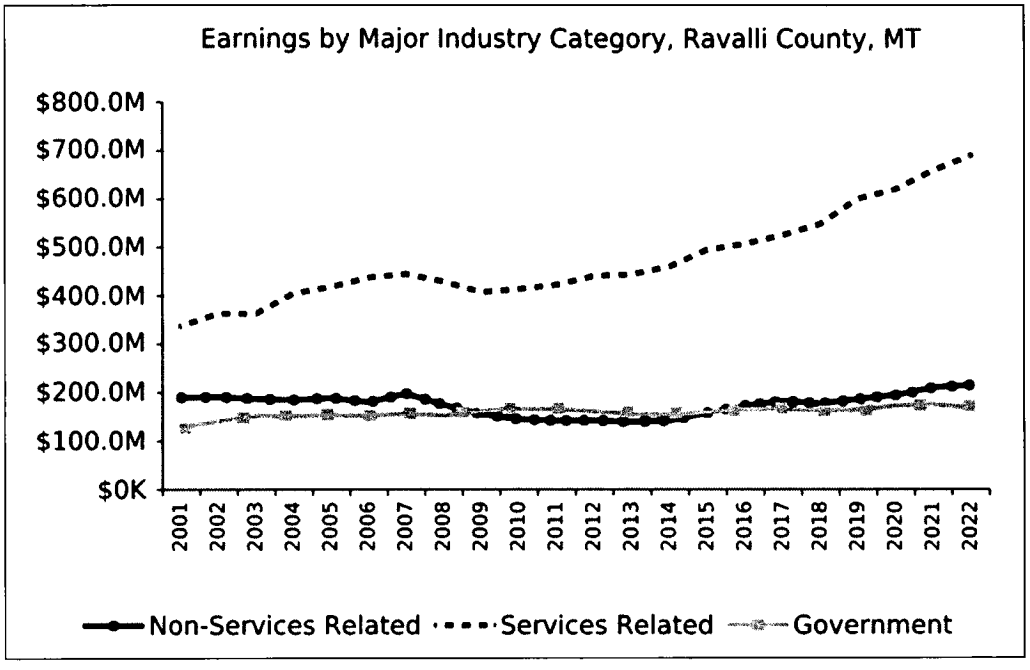

Figure 2 Change in earnings for each major industry category in Ravalli County between 2001 and 2022

Earnings in Ravalli County have nearly doubled since 2001. The top industries by earnings are government ($173.8M), construction ($148.2M), healthcare ($145.1M), and professional and technical services ($124.1M). Since 2001, the number of jobs in real estate and rental leasing have grown 104% and jobs in government, farming, and manufacturing have all decreased by around 30% (Headwaters Economics 2025b). In 2022, service-related industries provided over two thirds of the jobs and earnings in Ravalli County (Figure 3 and Figure 4).

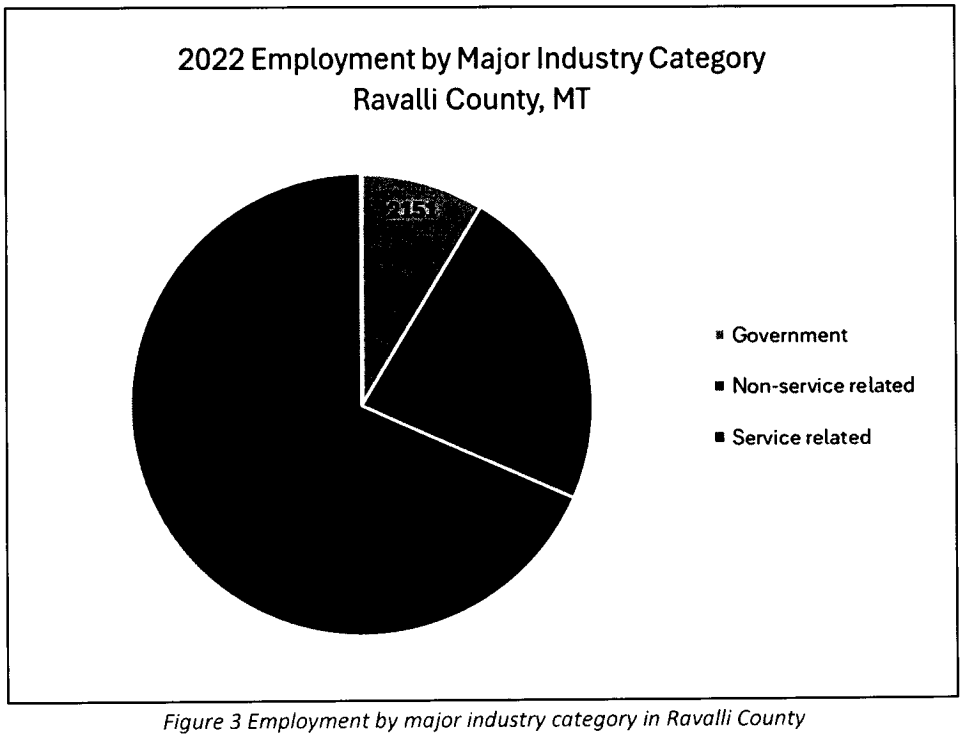

Figure 3 Employment by major industry category in Ravalli County

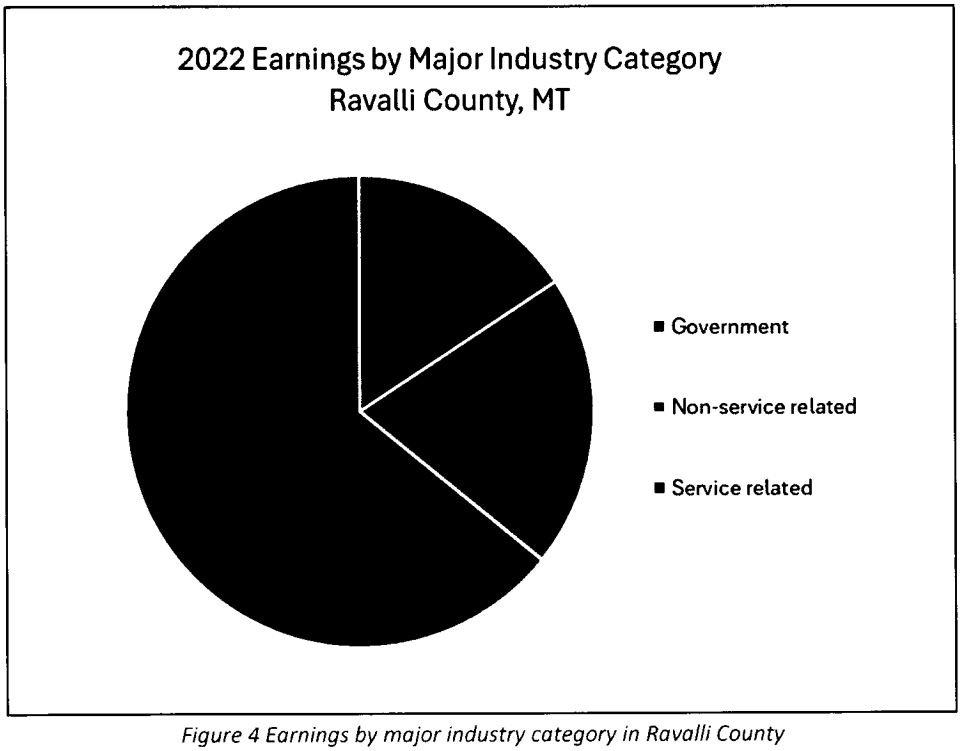

Figure 4 Earnings by major industry category in Ravalli County

Industries and jobs which depend on natural resources include both services-related and non-services related jobs. Figure 5 and Figure 6 below display the number of jobs in non-services and services related industries, respectively. The industries marked with an * indicate some level of reliance on federal and state lands and the natural resources located thereon.

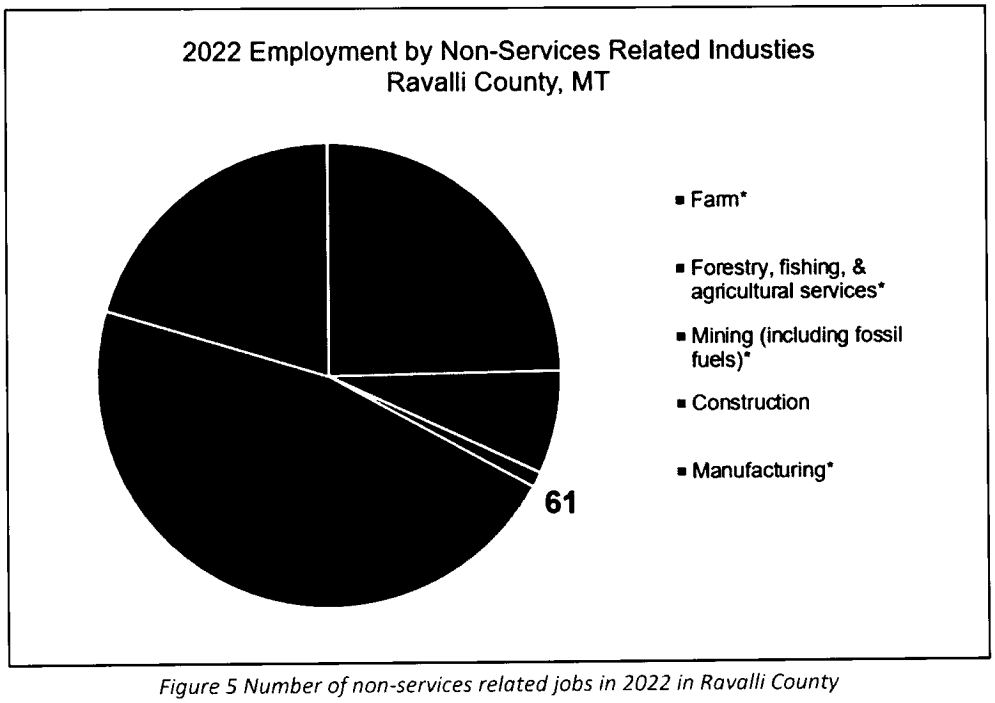

Figure 5 Number of non-services related jobs in 2022 in Ravalli County

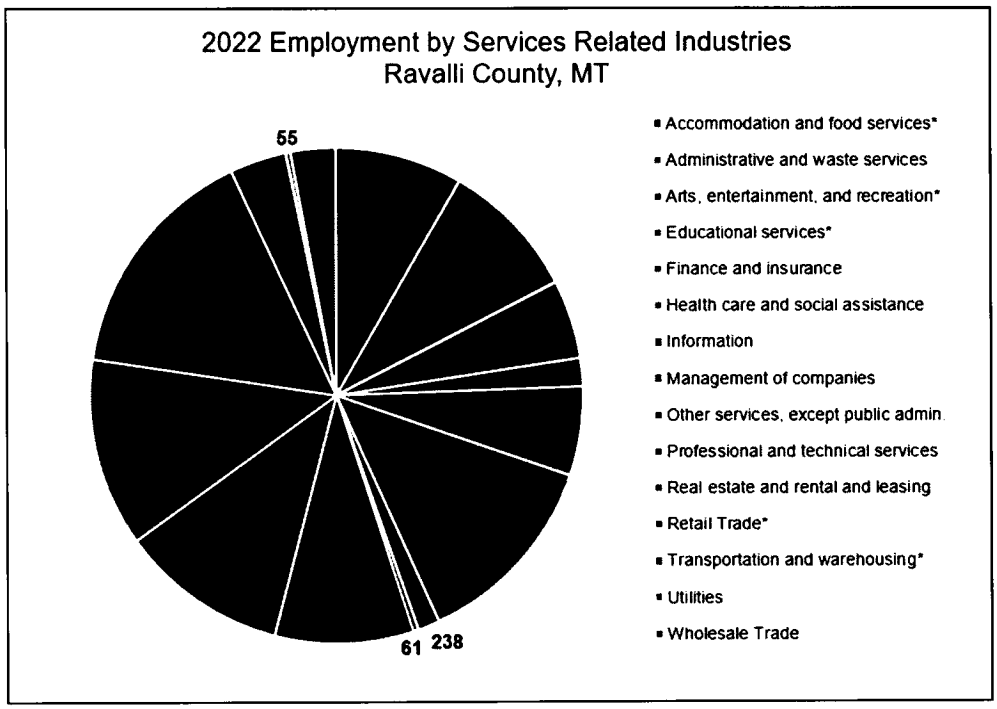

Figure 6 Number of services related jobs in 2022 in Ravalli County

The travel and tourism sector includes jobs in retail trade, passenger transportation, arts, entertainment, recreation, accommodation, and food. In 2023, 15% of jobs in Ravalli County were in the travel and tourism sector (Headwaters Economics 2025a). From 2001 to 2023, this sector experienced significant job growth (Figure 7), with retail trade growing by 52%, passenger transport by 750% (from 2 to 17 jobs), arts, entertainment, and recreation growing by 29%, and accommodation and food services growing by 44%.

Non-services-related (or commodity) jobs dependent on natural resources include agriculture, forestry, fishing and hunting, mining, and manufacturing. As mentioned above, growth in these industries has been outpaced by the services and retail sectors. Compared to Montana, Ravalli County has a higher percentage of employment in agriculture and timber (Figure 8). Note that all of these activities occur on both public and private lands, and nearly all agricultural activities occur on private lands.

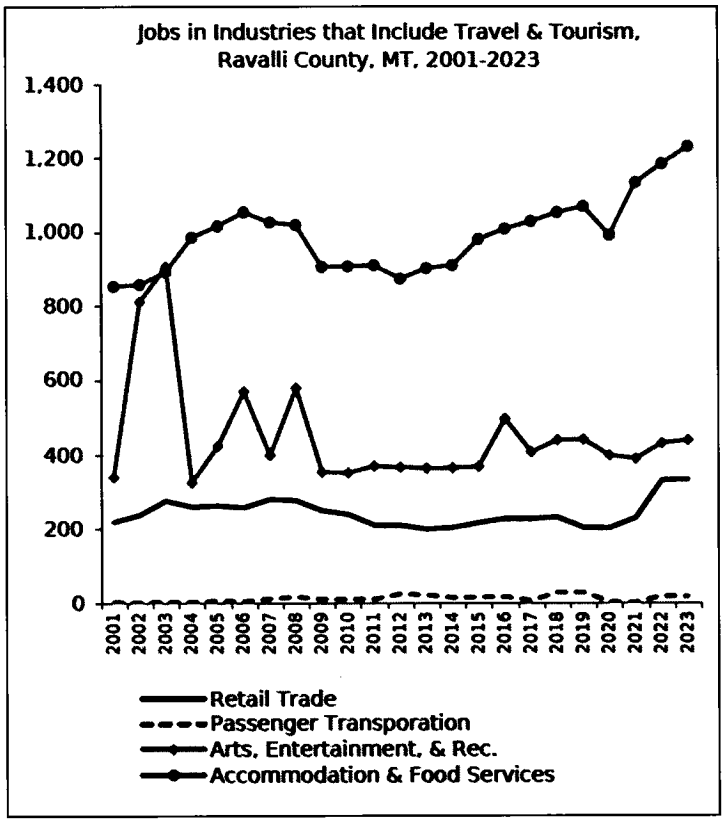

Figure 7 Change in employment in travel and tourism industries in Ravalli County

Note: Charted values represent the components of each sector related to travel and tourism.

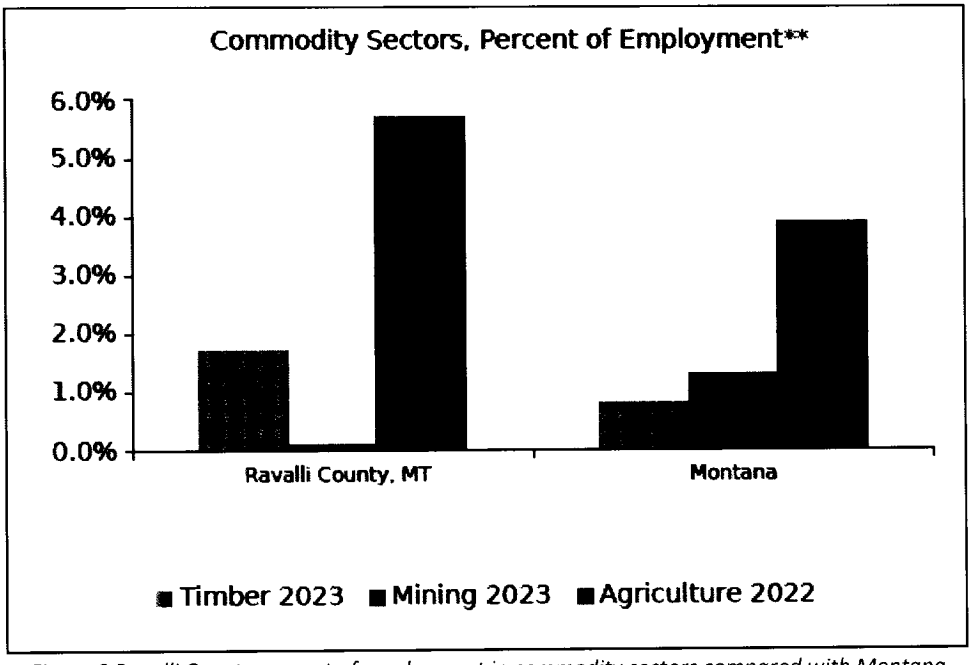

Figure 8 Ravalli County percent of employment in commodity sectors compared with Montana

Note: Data for timber and mining are from the Quarterly Census of Employment and Wages, which excludes proprietors. Data for agriculture is from Bureau of Economic Analysis which includes proprietors. The latest year for each data source may vary due to different data release schedules.

While it is difficult to separate all of the economic components that relate directly or indirectly to the management of state and federal lands, it is clear that these lands and the opportunities and resources they provide are a significant contributor to the growing tourism sector. Wildlife supported by these lands also serve as a large draw both in terms of private hunters and anglers who visit the county and use services and those who hire guides and outfitters.

Timber harvested from the national forest contributes far less as a percentage of the local economy now than it did forty years ago. Without the ability to process forest products locally, Ravalli County is not likely to see timber harvest surge significantly. Other commercial uses tied to federal and state lands may not make up a substantial portion of the county's revenue, but they are important nonetheless; contributing to both the maintenance of the county's customs and culture and the livelihoods of county residents.

Chapter 3: Recreation, Tourism, and Society

Recreation and tourism play a vital role in shaping the custom, culture, and economy of Ravalli County. The county offers a wealth of outdoor activities including but not limited to hunting and fishing, river floating and boating, skiing, horseback riding, hiking, camping, mountain biking, and wildlife viewing mainly within the BNF. The BNF has seen a steady increase in visitation from roughly 400,000 visits in 2012 to 584,000 visits in 2022 (NVUM 2022b). With its diverse landscapes and abundant natural resources, Ravalli County provides countless opportunities for outdoor enthusiasts to explore and enjoy. The following sections describe and discuss developed and dispersed recreation as well as visual resources, cultural and historical resources, and law enforcement.

Developed Recreation

Developed recreation generally includes forms of recreation that primarily occur using infrastructure designed for recreation purposes such as trailheads, trails, roads, and campgrounds.

Resource Assessment

Hiking and Backpacking

Ravalli County offers many hiking and backpacking opportunities where trails range from easy day hikes to challenging, multi-day, backcountry routes. The BNF features countless trails that wind through stream bottoms, high ridges and open meadows to dense forests and lakes. Popular hiking destinations include Blodgett Canyon, Lake Como, and Trapper Peak – the highest point in the Bitterroot Mountains (USFS 2025a). According to the 2022 National Visitor Use Monitoring (NVUM) survey of the BNF, hiking was the top activity at 58.7% of total site visits (NVUM 2022a). The Selway-Bitterroot, Anaconda-Pintler, and Welcome Creek Wilderness areas also provide extensive wilderness hiking and backpacking opportunities. Comprising roughly 1.3 million acres, one fifth of which lies in Montana, the Selway-Bitterroot Wilderness is the third largest Wilderness area in the lower 48 states (USFS 2025f).

Snow Skiing and Snowmobiling

Ravalli County offers a variety of winter recreation opportunities including downhill skiing and snowboarding at Lost Trail Ski Area; and cross-county skiing, snowshoeing, and snowmobiling at Chief Joseph Cross-Country Ski Area. The Lost Trail Ski Area straddles the Montana-Idaho border with access to more than 60 defined trails at affordable prices (Lost Trail Ski Area 2024). The Chief Joseph Ski Area has nearly 30 combined miles of ski, multi-use, and touring trails adjacent to Lost Trail Ski Area (Bitterroot Cross Country Ski Club 2025).

Camping and Picnicking

A wide variety of public and private camping and picnicking facilities are available in Ravalli County. Most facilities are managed by federal and state agencies, although several private, commercial campgrounds are located throughout the county. Lake Como, Bass Creek, and Painted Rocks Campgrounds are popular among locals and tourists alike for developed

overnight stays in the BNF. These users accounted for 13.9% of total visits to the BNF in 2022 (NVUM 2022a). The Woodside Bridge, Hieronymus, and River Parks also offer day-use walking trails and picnic areas (MT FWP 2025c).

Horseback Riding

Horseback riding is popular in Ravalli County, and there are hundreds of miles of trails accessible to horses within the BNF. In 2022, these users accounted for 3.3% of total site visits to the BNF (NVUM 2022a). Through a strong partnership between the USFS and the Backcountry Horsemen of Montana, equestrians play a vital role in maintaining popular trails each year (Public Land Solutions 2022). These developed trails are affiliated with stock facilities and either have hitching rails, stock ramps, feed bunks, or a combination of these amenities (USFS 2025c).

Mountain Biking

Biking was the fastest-growing outdoor recreation activity in 2023 (Romboy 2024), and Ravalli County is home to many miles of singletrack mountain biking (MTB) trails. However, these users accounted for only 2.5% of the total site visits on the BNF in 2022 (NVUM 2022a). Many of these trails are maintained through partnerships with the local trail advocacy group Bitterroot Backcountry Cyclists (BBC) and state and federal agencies. MTB enthusiasts frequent Lake Como, Bunkhouse, Soft Rock, Skalkaho, Sleeping Child, Gold Creek Trails, and others (Public Land Solutions 2022).

Off-Highway Vehicles and Motorized Routes

Ravalli County is home to over 250 miles of off-highway vehicle (OHV) accessible roads and trails (Public Land Solutions 2022). The BNF offers several riding areas out of the Darby, Sula, and West Fork Ranger Districts (USFS 2025e). The most popular OHV area is the Darby Trail system, which offers roughly 44 miles of motorized routes developed by the Ravalli County Off Road User Association and the U.S Forest Service (USFS 2017). OHV users accounted for less than 1.3% of the total site visits to the BNF in 2022 (NVUM 2022a).

Floating and Boating

Two large reservoirs in the county, Lake Como and Painted Rocks Lake, offer motor boating, water-skiing, and swimming opportunities while the Bitterroot River is a popular destination for rafting, kayaking, and tubing (USFS 2025g). These public waters have developed boat launches and put-in/take-out locations to accommodate recreational users. Many of these fishing access sites, managed by MT FWP, also provide opportunities for picnicking, camping, and other forms of recreation.

Resource Management Objectives

1. Promote federal and state land management actions that support recreation, tourism, and associated businesses in Ravalli County, including a broad range of activities from primitive outdoor adventures to off-road vehicle use.
2. Maintain quality experiences for users in heavily used areas to allow for forest

health recovery.

3. Maintain and enhance commercial recreational opportunities that contribute to the local economy.

Strategies

1. Coordinate with state and federal agencies to encourage the maintenance and use of developed recreational facilities such as campgrounds, boat launches, trails, trailheads, picnic areas, ski areas, parks, and wildlife refuges.
2. Coordinate with state and federal agencies to encourage the development and maintenance of new developed recreation sites similar to those listed above, incorporating local involvement to prioritize new facilities.
3. Support the spatial distribution of developed sites and trails such that recreational use is distributed and concentrated use is minimized to reduce resource damage and improve user experiences.
4. Recognizing that Wilderness areas are set aside for non-motorized use, support management decisions that allow both motorized and non-motorized use in non-Wilderness areas. Exceptions to this general policy could be made in some areas for reasons of safety or other extenuating circumstances after considering public input and coordinating with applicable agencies.
5. Encourage and support partnerships between local interest groups and agencies with respect to recreational facility development and maintenance.
6. Implement a plan to mitigate adverse recreational impacts through external funding.
7. Develop for a list of needed sanitation improvements and infrastructure at developed recreation and fishing access sites and support such improvements.
8. Encourage the development of seasonal and year-round loop trail systems for OHVs and hikers including mixed use trails, OHV trails, and pedestrian-only trails.

Dispersed Recreation

Dispersed recreation generally includes forms of recreation that primarily occur in unimproved areas, such as hunting and camping in undeveloped areas with no amenities.

Resource Assessment

Wildlife and Scenic Viewing

Ravalli County is home to several wildlife viewing areas, offering opportunities to observe species in their natural habitats. The Lee Metcalf National Wildlife Refuge is a prime destination for birdwatching that features bald eagles, osprey, sandhill cranes, and numerous waterfowl (USFWS 2025b). The Skalkaho Wildlife Preserve and Threemile Wildlife Management Area provide rugged landscapes where visitors can spot bighorn sheep, elk, mule deer, birds, and other wildlife species (MT FWP 2025d). The BNF attributes 58% of total site visits in 2022 to wildlife and scenic viewing (NVUM 2022a). Whether photographing wildlife or simply enjoying the serenity of nature, these protected areas provide some of the best wildlife viewing in the Bitterroot Valley.

Hunting, Trapping, Fishing, and Outfitting

Ravalli County boasts numerous hunting, trapping, fishing, and outfitting opportunities for those choosing to pursue this form of recreation. The BNF and its Wilderness areas provide hunting opportunities for elk, mule deer, whitetail deer, Rocky Mountain bighorn sheep, moose, waterfowl, turkey, wolves and upland game birds as well as trapping opportunities for furbearers, to name a few (USFS 2025d; Howell 2024). Outfitters often use horses to pack in camping supplies and/or pack out harvested animals. The Bitterroot River, its tributaries, and local lakes attract anglers in pursuit of Bull, Rainbow, and Cutthroat trout (Bitterroot Valley 2025). Hunters, trappers, anglers, and outfitters accounted for 15.7% of total site visits to the BNF in 2022 and contribute greatly to the economic well-being of the county (NVUM 2022a).

Backcountry Skiing and Snowmobiling

In addition to the developed skiing at Lost Trail Ski Area and Chief Joseph Cross-Country Ski Area, backcountry skiers and snowmobilers take advantage of snow-covered slopes throughout the BNF. In 2022, these users accounted for 13.1% of the total site visits to the BNF (NVUM 2022a). Smaller, less developed cross-country skiing opportunities exist in other parts of the BNF, some of which include snow biking. The season can range from October well into the summer months in the high country.

Dispersed Camping

Dispersed camping sites are available throughout the county on state trust lands and national forest lands. These sites are not developed and may involve travelling off maintained roads and trails in the area for recreationists to reach their destination. Popular dispersed camping sites in the BNF include the Lost Horse Creek and Tin Cup areas (USFS 2020). During the fall, hunters, trappers, and outfitters frequently make use of dispersed camping sites.

Resource Management Objectives

1. Promote federal and state actions designed to spread out dispersed recreationists across all publicly accessible lands to reduce resource impacts and improve user experiences.
2. Promote federal and state actions designed to support healthy wildlife habitat and support a sustainable and robust hunting, fishing, trapping, and wildlife viewing economy in Ravalli County.

Strategies

1. Coordinate with the USFS to encourage the maintenance of a road system that supports recreation access to all parts of the forest not designated as Wilderness or Inventoried Roadless Area (IRA).
2. Support the use of prescribed fire and fuels treatments designed to improve wildlife habitat.
3. Support actions that control invasive species (aquatic and terrestrial) so that native and other desired species can thrive.
4. Support continued application of the "300-foot rule" on USFS lands, which allows for

motorized vehicle travel up to 300 feet from designated roads and trails to establish a campsite or retrieve game.

5. Support the cross-country travel ban on off-trail motor vehicle use on USFS lands when the ground is not snow covered.
6. Support widespread use of areas designated for over-snow vehicle use during USFS planning processes.
7. Ensure road decommissioning and closures are justified with environmental, wildlife, and/or public health and safety impacts.

Visual Resources

Resource Assessment

Ravalli County has a combination of mountains, wide-open spaces, natural landscapes, and skylines that are important to many residents. The spectacular views from many parts of the populated Bitterroot Valley are an important part of the county's culture and what draws people to the valley. Protection of viewsheds along highways enhances tourism and encourages travelers to stop and enjoy the county's scenic vistas. The character and quality of visual resources in Ravalli County vary due to changes in landscape character and their patterns. Visual character describes the visual patterns of form, line, color, texture, dominance, scale, and diversity of elements in the landscape.

The USFS views landscape components of landform, vegetation types, and cultural modifications as the basis for the definition of visual resources. The visual qualities of USFS lands within Ravalli County are managed based on the Visual Quality Objective (VQO) classification system (USFS 1987). See Table 2 for classification descriptions and acreages on USFS lands within Ravalli County and Map 1 in Appendix B for a depiction of VQO classes in the county. Note that the forthcoming revision to the BNF Forest Plan may refer to a slightly different system which uses Scenic Integrity Objective (SIO) classifications.

On USFS lands, VQOs are important because they can influence forest actions. For example, a large open pit mine or clear cut with sharp, straight edges would not be appropriate in areas with classifications of preservation, retention, or partial retention. It is important to note that VQOs tend to align with other spatial designations (e.g., Wilderness areas tend to carry a *preservation* classification), so this system tends not to result in significant additional restrictions on forest actions.

State and private lands also contribute to the overall visual quality within the county; however, no similar system exists to manage the visual resource on these lands. Nonetheless, state and private actions can impact the county's overall scenic quality.

Table 2 USFS Visual Resource Classification within Ravalli County

Visual Quality Objective (VQO) Classification	Acres in Ravalli County (USFS)
Preservation (In general, human activities are not detectible to the visitor.)	357,612
Retention (Human activities are not evident to the casual forest visitor.)	237,342
Partial Retention (Human activities may be evident but must remain subordinate to the characteristic landscape.)	123,794
Modification (Human activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in middle-ground or background.)	356,950
Same as Surrounding Management Areas	43,080
Total Acres	**1,118,778**

Resource Management Objective

1. Promote the maintenance and improvement of Ravalli County's natural beauty and scenic character for the benefit of county residents and visitors.

Strategies

1. Support management actions on USFS lands that reduce the likelihood of large, high-intensity wildfires that deteriorate the landscape and create wildfire smoke, negatively impacting the county's scenic beauty.
2. Ensure that timber harvests consider visual impacts during planning processes. Slope, aspect, visibility from populated areas and recreation destinations, and timber edges/lines can all be managed to reduce visual impacts.
3. Help federal and state agencies find ways to undertake actions on their respective lands that benefit the local economy while protecting the county's scenic character.

Cultural and Historical Resources

Resource Assessment

Ravalli County is home to several significant cultural and historical landmarks that showcase its rich heritage of Indigenous traditions, missionary influences, and the economic boom brought by mining and agriculture. The Bitterroot Valley is the ancestral homeland of the Salish Native Americans. In 1805, an encounter between the Salish and the Lewis and Clark Expedition occurred at Ross' Hole at the southern end of Ravalli County. The Salish people welcomed the explorers warmly and provided them with food, supplies, and guides through the rugged mountainous terrain (NPS 2025).

In Stevensville, St. Mary's Mission & Museum and Fort Owen State Park stand as testament to Montana's first permanent white settlement. St. Mary's Misson, founded in 1841 by Jesuit missionaries, played a major role in early Indigenous-European relations and was responsible for establishing agriculture, animal husbandry and Christian teachings in the Bitterroot Valley.

Today, visitors can explore the restored church, historical artifacts, and the grave of Father Anthony Ravalli, the Jesuit priest for whom the county is named (Historic St. Mary's Mission & Museum 2025; Ravalli County 2012). Fort Owen State Park, a property listed on the National Register of Historic Places, preserves the remnants of a key 19th-century trading post and military fort. Originally established by Major John Owen in the 1850s, it became a center for commerce between settlers and the Salish, as well as the site of Montana's first sawmill, gristmill, water right, and school (MT FWP 2025a).

The Ravalli County Museum & Historical Society in Hamilton, housed in the former county courthouse, serves as a hub for local history. Exhibits include Native American artifacts, pioneer-era memorabilia, and displays on the Lewis and Clark Expedition. The museum also hosts educational programs and community events that celebrate the region's past such as the Annual McIntosh Apple Day, Cider Night Festival, and Bitter Root Day (Ravalli County Museum & Historical Society 2025a). Another notable landmark in Hamilton is the Daly Mansion. Copper King and Hamilton founder, Marcus Daly, originally purchased the homestead in 1886 when he came to the valley in search of timber to supply his copper mines (Ravalli County 2012). Daly transformed the property into a 24,000-square-foot mansion with more than 50 rooms, offering insight into Montana's mining boom during the late 19th century (Daly Mansion 2025).

In addition to these resources, three National Historic Trails intersect Ravalli County: the Lewis and Clark National Historic Trail, the Ice Age Floods National Geological Trail, and the Nez Perce (Nee-Me-Poo) National Historic Trail (Ravalli County Museum & Historical Society 2025b). These trails are managed to protect the nationally significant resources, qualities, values, and associated settings. All three trails run north-south along the valley bottom, generally paralleling the Bitterroot River.

Resource Management Objective

1. Encourage the preservation of Ravalli County's historical and cultural heritage.

Strategies

1. Support the inclusion of local Indigenous perspectives and values, including consultation required by law, during land management planning processes.
2. Recognizing that culture is not solely a thing of the past but also alive in the present, support and advocate for actions that sustain and revitalize industries on which Ravalli County was founded, specifically actions related to timber harvesting and processing.

Law Enforcement

Resource Assessment

Ravalli County law enforcement is dedicated to preserving and protecting the peace and dignity of the people of Ravalli County, and their rights and privileges established under the Montana Constitution and the Constitution of the United States.

The U.S. Constitution is the supreme law of the land (Article VI US Constitution); however, powers not delegated to the federal government by the Constitution are reserved for the states (Amendment X U.S. Constitution). Under the authority of the Montana State Constitution, the sheriff has jurisdiction to protect the health, safety, and general welfare of its citizenry. The federal government retains authority over federal lands pursuant to Article 1 Section 8 and Article 4 Section 3 of the U.S. Constitution. Aside from lands reserved for exclusive federal jurisdiction (e.g., national parks), the State of Montana retains some jurisdiction on those federal lands.

In general, federal laws or regulations pertaining to federal land are restricted to actions which directly affect federal land, have a nexus to the land, or are otherwise clearly required by federal law. Violations or crimes affecting people or private property that lack a strong federal nexus typically fall under state or local jurisdiction.

On USFS land, federal law states that the Secretary of Agriculture "may authorize the Forest Service to cooperate with the law enforcement officials of any Federal agency, State, or political subdivision in the investigation of violations" related to drugs and controlled substances (16 USC § 559d(2)). The USFS is also "authorized to accept law enforcement designation from any other Federal agency or agency of a State or political subdivision thereof for the purpose of cooperating in a multi-agency law enforcement task force investigation of violations" related to the same (16 USC § 559d(5).

The search and rescue program for Ravalli County is conducted through the Ravalli County Sheriff's Office. Law enforcement communications equipment and radio towers vital to law enforcement and search and rescue operations are often located on public land. In Ravalli County, communications facilities located on USFS lands are used extensively and relied upon for emergency response, including wildfire, structure fires, and other emergency medical situations. Consequently, communication facilities on public land are important for public health, safety, and welfare and necessary for law enforcement.

Resource Management Objective

1. Protect the public and their property when visiting state- and federally managed lands.

Strategies

1. Encourage state and federal law enforcement to coordinate and cooperate with local law enforcement agencies and local, state, and federal firefighting organizations to best serve and protect the public.
2. Support and develop interagency coordinated agreements to facilitate cooperation of federal and state law enforcement agencies with the Ravalli County Sheriff.
3. Support the construction, maintenance, and protection of strategically located communication towers to aid law enforcement activities.
4. Support the coordination among local search and rescue teams, Ravalli County

Sheriff's Office, and federal and state land managers prior to and during emergency response on federal and state lands within the county.

5. Seek the maximum federal and state funding available to support local law enforcement and related activities, which may include wildfire response, search and rescue, and other related programs.

Chapter 4: Land Management

Land Use

Resource Assessment

Over 73% of surface lands within Ravalli County are administered by the USFS, followed by private lands at 24% (BLM 2024) as summarized in Table 3 and shown on Map 2 in Appendix B. Given the distribution of public and private lands, county life and values are intrinsically linked to management decisions made by federal agencies such as the USFS and USFWS. Montana State lands make up just over 2% of the County and are predominantly located in the valley, whereas most federal lands occur in the surrounding mountains at higher elevations.

Table 3 Ravalli County Surface Land Ownership

Owner	Acres	Percent of County
USFS	1,124,082	73.2%
Private	372,149	24.3%
State (MT)	34,182	2.2%
USFWS	2,843	0.2%
Undetermined	1,565	0.1%
BLM	0.0001	0.0%
Total	**1,534,821**	**100.0%**

U.S. Forest Service

The origins of federal forest management date back to 1876 when Congress formed the office of Special Agent in the U.S. Department of Agriculture (USDA), which would become the Division of Forestry in 1881. Ten years later, the Forest Reserve Act of 1891 authorized the designation of lands known as forest reserves. The Organic Act of 1897 stated that these forest reserves would be established to "improve and protect the forest within the boundaries or for the purpose of securing favorable conditions of water flow, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States [...]". In 1905, management of these reserves was transferred from the Department of Interior to the USDA's Bureau of Forestry, a title which was officially changed to the U.S. Forest Service later that year. The Multiple-Use Sustained-Yield Act of 1960 (MUSYA; Public Law 86-517) required the USFS to develop and administer the renewable resources of timber, range (grazing), water, recreation, and wildlife and fish on the national forests for multiple use and sustained yield of products and services. This law was amended by the Omnibus Parks and Public Lands Management Act of 1996. Today, the Organic Act, MUSYA, and NFMA (Public Law 94-588, 1976) all work together to govern the administration of national forests.

The USFS administers the BNF, which comprises approximately 73% of Ravalli County's land area (Table 3). These lands are a major contributor to the county both in tourism revenue and recreational opportunities.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) manages lands within the Lee Metcalf National Wildlife Refuge located near Stevensville and established in 1964. The refuge occurs along the Bitterroot River and adjacent floodplains, meadows, wetlands, and grasslands. The refuge is intended to support migratory birds and to conserve and protect natural resources and other special status fish and wildlife species. The area is also managed to support incidental fish and wildlife-oriented recreational development, and it is well-known for prolific birdwatching and photography opportunities. The USFWS also acts as the implementing agency for the Endangered Species Act (ESA). In various ways, the ESA's reach extends to federal, state, and private lands where listed species and their habitats may occur.

Montana State Lands

When Montana was accepted into the Union via the Enabling Act of 1889, the U.S. Congress granted lands to the state consisting of Sections 16 and 36 per each Township, now referred to as state trust lands. Trust lands managed by the State of Montana generate income through grazing and agricultural leases and licenses, timber sale revenues, land use leases and licenses, special recreation use licenses, and a portion of conservation licenses issued by MT FWP, which in turn generate revenue to fund schools, primarily K-12, and other public institutions. As working lands, some state trust lands have limited public access or uses, according to lease specifications, whereas others are popular hunting, fishing, and recreational destinations. Other state lands, such as state parks, fishing access sites, and wildlife management areas are managed by Montana Fish, Wildlife, and Parks (MT FWP). Numerous fishing access sites occur along the Bitterroot River and tributaries to support a robust fishing community and other recreationists. State parks include Fort Owen State Park north of Stevensville and Painted Rocks State Park southwest of Sula. Two wildlife management areas managed by MT FWP occur within the County; the Bitterroot State Wildlife Management Area Calf Creek Segment and Threemile State Wildlife Management Area, both of which primarily protect winter range for large ungulates.

Changes in Land Use

Land use in Ravalli County has changed over the last twenty years due to population increases and associated development. Changing land uses as well as natural disturbance, such as wildfire and flood events, can also catalyze dramatic shifts in vegetation communities and landscape characteristics. Notably, shrub/scrub cover has increased by 8.93%, while evergreen forest and herbaceous/grasslands have decreased by 2.92% and 6.41%, respectively (USGS 2018) (Table 4). The trend of conversion from grasslands to shrub cover is likely due to woody encroachment which is a phenomenon that can occur in native perennial grassland areas after decades of fire suppression, overgrazing, and other human disturbance. While shrub encroachment can be a natural part of the succession process, its occurrence at the intersection of forested and grassland areas can negatively impact wildlife habitat due to changes in vegetation structure and community composition. Cover types associated with development increased by a cumulative total of 0.27%, illustrating a trend of increasing development.

Not reflected in the data is the observed trend of conifer encroachment on grasslands and shrub lands. This type of trend can reduce quality winter range for wildlife and increase wildfire risks as the forest boundary advances toward and through developed areas.

Table 4 Change in Land Cover in Ravalli County, MT from 2003 to 2023

National Land Cover Database Cover Types	Change in Acres (2003-2023)	Percent Change of County (2003-2023)
Shrub/Scrub	137,114.9	8.93%
Developed, Open Space	3,708.2	0.24%
Barren Land	2,508.4	0.16%
Cultivated Crops	2,239.1	0.15%
Developed, Medium Intensity	715. 7	0.05%
Woody Wetlands	236.6	0.02%
Deciduous Forest	65.2	0.00%
Developed High Intensity	46.0	0.00%
Mixed Forest	8.7	0.00%
Perennial Snow/Ice	0.0	0.00%
Open Water	-140.3	-0.01%
Emergent Herbaceous Wetlands	-185.9	-0.01%
Developed, Low Intensity	-321.6	-0.02%
Hay/Pasture	-2,720.6	-0.18%
Evergreen Forest	-44,857.9	-2.92%
Herbaceous/Grasslands	-98,416.5	-6.41%

Tax Implications

Privately owned and developed lands are the foundation of the county's tax base. Federal and state lands are generally not taxable by the county. To help local governments offset the lost tax revenue from federal lands located within their jurisdiction, the federal government makes Payments in Lieu of Taxes (PILT). In 2024, Ravalli County received over $3.3 million in PILT payments, which is equivalent to about $3.00 per acre of federal land within the county (Montana Association of Counties 2025).

Resource Management Objectives

1. Maintain the existing composition of federal, state, and private land within Ravalli County.
2. Halt or reverse the steady trend of grasslands being converted to shrub/scrub land and conifer cover types on state and federal lands.
3. Maximize the amount of PILT funding the county receives from the federal government to offset impacts on local services from federal lands
4. Reduce catastrophic wildfire risk through fuels mitigation.

Strategies

1. Review federal and state land-use and planning proposals pertaining to natural resources, such as the BNF forest plan revision and plan amendments, and make recommendations to applicable agencies and parties.
2. Support state and federal projects that enhance grasslands and protect grasslands from conifer encroachment.
3. Ensure widespread support from county residents before supporting any proposed public-private or federal-state land swaps.
4. Encourage the use of prescribed fire and other treatments designed to maintain and recover grasslands on public lands.
5. Support Montana Association of Counties, NACo, and other organizations to advocate for maximum PILT and SRS funding.
6. Support state and federal projects that increase the pace and scale of forest management.
7. Consider recommendations from local collaborative groups regarding land use and natural resource issues on state and federal lands when the groups have subject matter expertise.

Land Access

Resource Assessment

Public access to federal and state lands is largely contingent upon existing transportation networks and designated access points such as trailheads, fishing access sites, boat launches, campgrounds, and recreational sites. Ravalli County's main transportation corridor consists of U.S. Highway 93, which bisects the valley, running north-south. Other public roads throughout the county include the Eastside Highway, Highway 38, USFS-managed road systems, and county roads. Approximately 550 miles of road are managed by Ravalli County, with approximately 300 miles paved and 250 miles graveled. The USFS manages over 2,700 miles of roads within the county, much of which are closed to public use but available for official use and emergency response. Roads maintained by the USFS range in maintenance levels as illustrated in Table 5 and described below. The level of maintenance typically corresponds to level of use and ease of access for the public.

Table 5 USFS Road Mileage by Maintenance Level in Ravalli County

Maintenance Level	**Miles**
1 – Basic Custodial Care (Closed)	920
2 – High Clearance Vehicles	1,078
3 – Suitable for Passenger Cars	763
4 – Moderate Degree of User Comfort	18
5 – High Degree of User Comfort	6
Total	**2,785**

Road Maintenance Level 1: This level is assigned to intermittent service roads during the time management direction requires that the road be closed to traffic. Basic custodial maintenance is performed to protect the road investment and to keep damage to adjacent resources to an acceptable level.

Road Maintenance Level 2: This level is assigned where management direction requires that the road be open for limited passage of traffic. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Roads in this maintenance level are intended for use by high-clearance vehicles. Passenger car traffic is not a consideration.

Road Maintenance Level 3: This level is assigned where management direction requires the road to be open and maintained for safe travel by a prudent driver in a standard four-wheel passenger car. Traffic volumes are minor to moderate; however, user comfort and convenience are not considered a priority. Roads in this maintenance level are normally low speed, single lane with turnouts and spot surfacing.

Road Maintenance Level 4: This level is assigned where management direction requires the road to provide a moderate degree of user comfort and convenience at moderate travel speeds. Traffic volumes are normally sufficient to require a double-lane aggregate-surfaced road. Some roads may be single-lane and some may be paved or dust abated.

Road Maintenance Level 5: This level is assigned where management direction requires the road to provide a high degree of user comfort and convenience. These roads are normally double-lane, paved facilities. Some may be aggregate-surfaced and dust abated.

Roads are costly for the USFS to maintain and result in a variety of environmental impacts associated with dust, noise, runoff/erosion, and increased human presence. For these reasons, the USFS has been closing roads that the agency deems unnecessary in recent years. Roads can also provide improved access for fire suppression activities and certain types of recreation.

In addition to roadways, the USFS manages various trailheads, trails, campgrounds, and associated facilities that facilitate access. Trailheads are numerous along the eastern edge of the Bitterroot Mountains, connecting to a vast network of public trail systems. Several campgrounds exist throughout the County and largely coincide with trailheads, though several are located in the backcountry.

MT FWP also manages several campgrounds within the valley that are typically associated with a fishing access site or state park. The Bitterroot River and its tributaries also attract many recreationists who primarily access the river for boating, fishing, or swimming via a number of boat launches and fishing access site managed by MT FWP.

Collectively, the road system and developed recreation sites to which it provides access largely dictate where use of national forest lands is concentrated. As such, many easily accessible areas consistently receive high levels of use while other areas of the forest receive very little use.

Rights-of-Way, Easements, and Corridors

Rights-of-way (ROWs) and corridors on federal lands provide for the development of certain types of infrastructure or facilities that are in the public interest for a specified period of time. This can include intrastate and interstate transportation projects such as roads and utilities as well as legal access to private homes or ranches. Other types of ROWs include water reservoirs, communication sites, pipelines, and transmission lines. These are authorized under Title V of FLPMA for federal agencies.

The MT DNRC's ROW Section of the Real Estate Management Bureau manages ROWs and easements across and for state trust lands. These ROWs are typically granted for linear uses such as public roads and utility lines, whereas easements are often granted for private access and are concentrated to a single area (MT DNRC 2024b). Montana's state statutes dictate the types of ROW and other easements that may be granted by the State Board of Land Commissioners. In areas where state trust lands are landlocked, the MT DNRC pursues opportunities to acquire access to these lands through cost-share agreements and other reciprocal opportunities. The USFS and MT DNRC maintain a cost-share agreement that facilitates shared access and maintenance costs where ownership intermingles.

Resource Management Objectives

1. Maintain and enhance a road system adequate for wildfire response, resource management, and recreation throughout non-Wilderness federal and state lands, particularly in the Wildland Urban Interface (WUI) as identified in the county's Community Wildfire Protection Plan (CWPP).
2. Maintain and enhance a road system on USFS lands that facilitates distributed use throughout the national forest.

Strategies

1. Ensure the BNF fully considers the county's CWPP and this policy document during the forest's plan revision process.
2. Work with the USFS to understand their road maintenance and enforcement capacity and seek opportunities to collaborate on maintenance and travel rule enforcement.
3. Ensure road access and recreation dispersal are considered when new developed recreation facilities are proposed.
4. Support the continuation of existing ROWs, easements, and corridors. Abandonment or discontinuance of such access should only be supported if there is widespread support among county residents.
5. Support easement and ROW acquisitions for public access to landlocked public lands, and support federal efforts to better document easements and ROWs.
6. Consider and participate in all proposals to decommission or otherwise close roads and trails on USFS lands.

7. Support active maintenance by owners of water conveyance facilities present within federal lands (i.e., irrigation canals, flumes, ditches), especially those located within areas with special designations (e.g., IRA and Wilderness.)

Special Designations (IRA, Wilderness, etc.)

Resource Assessment

Special designations discussed here include wilderness areas, wilderness study areas (WSAs), recommended wilderness areas, Inventoried Roadless Areas (IRAs), and other special interest areas. These areas are illustrated on Map 3 in Appendix B.

Wilderness Areas

Congressionally designated Wilderness areas are areas of federal land set aside for preservation purposes. Five distinct qualities of Wilderness are described in the Wilderness Act of 1964 (P.L. 88-577) and clarified in a 2015 interagency report (Landres et al. 2015): natural, solitude or primitive and unconfined recreation, undeveloped, untrammeled, and other features of value [to be determined if relevant by the local unit] such as cultural resources, historical sites, paleontological sites, or any feature with scientific, educational, scenic, or historic value. Table 6 outlines the Wilderness areas present within Ravalli County.

Table 6 Wilderness Areas in Ravalli County, MT

Wilderness Name	Acres	Percent of County
Selway-Bitterroot Wilderness	249,308	16.2%
Anaconda Pintler Wilderness	41,123	2.7%
Frank Church-River of No Return Wilderness	25	0.0%
Welcome Creek Wilderness	<1	0.0%
Total	**290,456**	**18.9%**

In total, nearly 19% of Ravalli County is designated Wilderness. Mechanized travel is prohibited in Wilderness areas, which includes mountain biking as well as motorized travel. Timber harvest and other resource extraction is also generally prohibited, along with road construction.

Wilderness Study Areas and Recommend Wilderness Areas

WSAs are areas of federal land with Wilderness characteristics that have been nominated by Congress for additional study to determine eligibility for inclusion in the national Wilderness preservation system. WSAs are to be managed in a manner that maintains the area's suitability for preservation as Wilderness by limiting recreation activities to those that were in place when the law was enacted. There are two WSAs in Ravalli County totaling just over 100,000 acres (Table 7). These include the Sapphire WSA (38,174 acres) and Bluejoint WSA (63,367 acres). These areas were identified by Congress in the Montana Wilderness Study Act (Public Law 95-150). In accordance with the Act's provisions, the USFS completed Final Environmental Impact Statements (FEIS) assessing the suitability of these areas for designation as Wilderness in 1987. The results of these studies are shown in Table 7.

Recommended Wilderness areas are areas of federal land with Wilderness characteristics that have been officially recommended as Wilderness in federal land management plans. In Ravalli County, the relevant land management plan is the BNF Forest Plan (USFS 1987), which recommends 77,312 acres of new Wilderness. These areas comprise Management Area 6 in the Forest Plan.

WSAs and recommended Wilderness areas generally overlap with IRAs, so these areas should not be added to designated Wilderness areas and IRAs to calculate the total protected area.

Table 7 Wilderness Study Areas in Ravalli County, MT

Wilderness Study Area Name	Acres	Percent of County	Acres Deemed Suitable for Wilderness in USFS FEIS
Bluejoint Wilderness Study Area	63,367	4.1%	28,500
Sapphire Wilderness Study Area	38,174	2.5%	0
Total	**101,541**	**6.6%**	**28,500**

Inventoried Roadless Areas

IRAs comprise nearly one-third of all National Forest System lands and were designated with ecological, recreational, and fiscal benefits in mind. The 2001 Roadless Rule established prohibitions on road construction, road reconstruction, and timber harvesting in IRAs on National Forest System lands, with limited exceptions. Table 8 summarizes IRAs within Ravalli County. In total, IRAs account for over 26% of the county.

Table 8 Inventoried Roadless Areas in Ravalli County, MT

Inventoried Roadless Area	Acres	Percent of County
Selway - Bitterroot (01067)	113,244	7.37%
Allan Mountain (01946)	104,083	6.78%
Blue Joint (mwsa) (01941)	64,656	4.21%
Stony Mountain	44,007	2.87%
Sapphire	43,250	2.82%
Sleeping Child (x1074)	21,413	1.39%
Tolan Creek (x1070)	7,085	0.46%
North Big Hole	3,481	0.23%
Needle Creek (01066)	1,109	0.07%
Swift Creek (01065)	613	0.04%
Lolo Creek	429	0.03%
Continental Divide National Scenic Trail	311	0.02%
13946 Allan Mountain	24	0.00%
Sapphires	5	0.00%
13941 Blue Joint Mountain	3	0.00%
North Fork Spruce - White Sand	<1	0.00%
Silver King	<1	0.00%
Beaver Lake	<1	0.00%
Total	**403,715**	**26.28%**

Other Special Interest Areas

Other special interest areas such as recreational, historic, and scenic trails; recreation areas; and research natural areas also exist within the county, as illustrated in Table 9. In general, actions in these areas that are not compatible with the area's purposes are prohibited. The National Trails System Act of 1968 promotes the establishment of trails in both urban and rural settings for people of all abilities and establishes four classes of trails: national recreation trails, national historic trails, national scenic trails, and side and connecting trails. National Recreation Trails are self-nominated trails that provide recreation access to rural and urban communities, economic development via tourism, and healthy recreation opportunities. National Historic Trails are established by acts of Congress and commemorate travel routes of significance to the nation. National Scenic Trails represent areas of remarkable natural beauty. Recreation areas are set aside by Congress due to the presence of notable natural resources, scenic attributes, and/or recreational opportunities. Management of national recreation areas and allowable activities within them vary according to which federal agency administers the lands. Research natural areas are designated and managed by the USFS and consist of areas with unique ecosystems or ecological features that warrant permanent protection and maintenance of natural conditions.

Table 9 Special Interest Areas in Ravalli County, MT

Special Interest Area Type	Special Interest Area	Acres	Percent of County
National Trails (Recreation, Historic, and Scenic)	Nez Perce Nee-Me-Poo NHT	20.2	0.001%
	Lewis & Clark NHT	86.0	0.006%
	Continental Divide NST	5.5	0.002%
	Como Lake Loop NRT	43.3	0.003%
	Easthouse NRT	97.7	0.006%
	Palisade Mountain NRT	36.5	0.002%
	Lee Metcalf NWR Wildlife Viewing Trail NRT	2.0	0.000%
National Trails Total		*291.2*	*0.021%*
Recreation Area	Lost Trail Ski Area Incorporated	1,217.0	0.079%
Recreation Area Total		*1,217.0*	*0.079%*
Research Natural Area	Bitterroot Mountain Snow Avalanche	1,784.8	0.116%
	Bitterroot River	40.5	0.003%
	Boulder Creek	953.1	0.062%

	East Fork Bitterroot	289.5	0.019%
	Lower Lost Horse Canyon	1,559.8	0.102%
	Sapphire Divide	563.5	0.037%
	Sawmill Creek	282.7	0.018%
	Upper Lost Horse Canyon	1,701.8	0.111%
Research Natural Area Total		*7,175.7*	*0.467%*

Special Designations Summary

Approximately 45% of Ravalli County (and 62% of federal lands within the county) holds one or more of the special designations discussed in this section. While these protections tend to benefit ecosystems, clean water, and various forms of recreation, they do so by limiting other land uses. In some cases, protective designations result in a lack of transportation infrastructure that can limit wildfire suppression tactics. Reduced access into such areas can also result in reduced emergency response, though motorized aircraft are permitted in such cases.

Resource Management Objectives

1) Ravalli County will only support new special designations of federal or state lands when there is substantial local input and support for the proposed designation, and the likely impacts of the proposed designation (both positive and negative) are well documented using the best available scientific information.
2) Ravalli County will support special land use designations that align (rather than conflict) with multiple-use concepts and the county's culture.
3) Support the release of federal lands from the WSA designation that do not possess Wilderness characteristics.
4) Protect and enhance the ability to maintain critical Wilderness dam infrastructure.

Strategies

1) In the event that new wilderness designations are proposed, Ravalli County will advocate for the application of the provisions of the Wilderness Act of 1964 that provide for the continuation of preexisting uses and the regulation of those uses only so far as necessary to prevent significant harm to the wilderness environment.
2) Oppose new wilderness and IRA designations unless strongly supported by county residents and commissioners.
3) Support the expeditious resolution of congressional Wilderness designation proposals for WSAs in Ravalli County and support the release of WSAs not recommended for wilderness designation from non-impairment management.
4) Oppose attempts to install protective perimeters or buffer zones around Wilderness areas. The fact that non-Wilderness activities or uses can be seen or heard from within a designated Wilderness area should not preclude such adjacent activities or uses.

5) Support the liberal application of the IRA's road-building, timber, and vegetation management exceptions. These include:
   a) Road construction necessary to protect health and safety in cases of imminent danger, such as wildfire;
   b) Reconstruction and maintenance of classified roads;
   c) Removal of small diameter timber if doing so will improve roadless area characteristics, improve habitat for ESA-listed species, and restore ecosystem structure and function, such as reducing the likelihood of catastrophic wildfire; and
   d) Timber harvest that is incidental to other management activities that are not otherwise prohibited.
6) Support efforts to release portions of the Sapphire and Blue Joint WSA's that do not possess wilderness characteristics.

Chapter 5: Vegetation Management

Timber

Resource Assessment

Ravalli County is part of the West-Central Montana Forest Region, which is characterized by larch and ponderosa pine with grand-fir locally dominant as well as warm, dry Douglas-fir forest habitat types (Hamilton Field Office NRCS 2024). With increasing elevation, forest types include lodgepole pine up to subalpine fir, alpine larch, and whitebark pine.

Ravalli County is 64% forested. Of that forested area, 85% is located on USFS-managed lands and an additional 2% is located on state-managed lands. In Ravalli County, timber resources on USFS lands are managed by the BNF in accordance with the forest's Forest Plan (USFS 1987). Both the BNF and State of Montana Trust Lands have the capability under proactive management to achieve a healthy forest ecosystem while providing clean water, clean air, wildlife habitat, recreational opportunities, and economic benefits and stability.

The BNF includes 290,456 acres of designated wilderness and 403,715 acres of IRA within Ravalli County. Timber harvest is prohibited in wilderness areas and prohibited with limited exceptions in IRAs. The Forest Plan identifies about 390,000 acres of suitable timberland and estimates the average planned annual timber sale to be about 33.4 million board feet (MMBF) on about 3,650 acres (USFS 1987, III-80). The most recent Biennial Monitoring Evaluation Report for the BNF reports average total volumes of timber sold to be 8.87 MMBF between 2015 and 2020 (USFS 2022), which is less than one-fourth of the estimated yearly timber sales outlined in the Forest Plan. This includes personal use and commercial use. Since 2000, about 45% (174, 483 acres) of the suitable timberland on the BNF has been impacted by wildfire.

Timber harvest and processing in Ravalli County have both declined dramatically in the last several decades. Between 1988 and 2018, it is estimated that harvests of BNF timber declined 71% (Barkey et al. 2018) with a general downward trend in timber harvesting on the BNF since 1968 (Figure 9). Active timber processing facilities in 1988 had the capacity to process 91 million board feet (MMBF) of timber while in 2014 capacity to process had dropped to 13 MMBF. (Barkey et al. 2018).

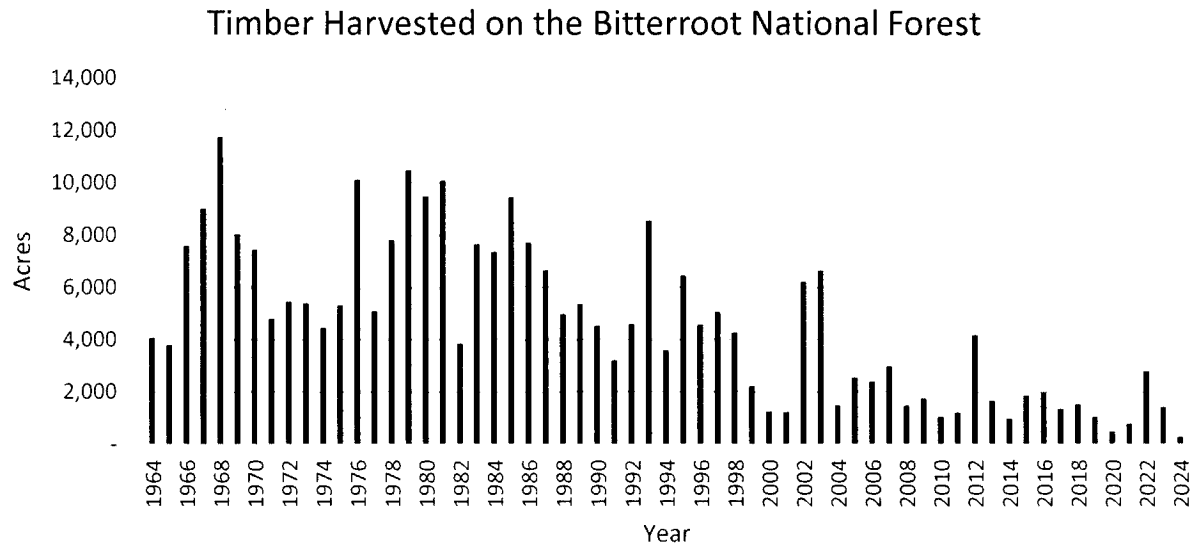

Figure 9 Acres of timber harvested on the BNF by year[10]

Resource Management Objectives

1. Promote healthy forests throughout federal and state lands within Ravalli County.
2. Reinvigorate the county's timber industry.
3. Ensure county residents have continued access to non-commercial timber resources (e.g., firewood, Christmas trees, posts and poles, etc.).

Strategies

1. Support a sustainable, predictable, and reliable level of timber harvest on federal and state lands within the county.
2. Support the return of timber and wood-product-related processing infrastructure to Ravalli County.
3. Support BNF efforts to address forest stands affected by insects and disease using the best available scientific information.
4. Protect locally rare tree and plant species (e.g., aspen, whitebark pine) and remaining areas of old-growth forest during forest health treatments and timber harvests.
5. Encourage commercial and non-commercial management in old growth forests to protect large trees and the greater ecosystems from catastrophic wildfire.
6. Encourage and support BNF efforts to monitor forest health and track trends, including the potential use of citizen science.
7. Continue to fund and support the County Forester position to work with the USFS on BNF projects.
8. Advocate to maximize the designation of areas suitable for timber harvest in the BNF forest plan revision process.

[10] Timber harvest numbers presented in Figure 9 include commercial thinning and associated activities.

9. Track BNF annual timber harvest levels and coordinate with the forest to help achieve the maximum sustainable yield.
10. Encourage and support economic development within Ravalli County intended to facilitate timber harvest operations (e.g., milling and processing).
11. Insist on replanting programs following timber harvests, based on the best available scientific information, that facilitate regrowth and long-term sustainable timber production.
12. Resist proposed actions that reduce or eliminate non-commercial uses of timber resources unless such proposals are widely supported by county residents.
13. Regularly evaluate new technologies associated with value-added wood products to assess the potential to use forest products in new ways that could economically benefit Ravalli County and its residents. Work with the BNF to evaluate the feasibility and economic viability of employing such new technologies.
14. Support public/private investments in wood products infrastructure.
15. Prioritize educating the public with clear and relatable communications to avoid misunderstandings and establish a strategy to mitigate the spread of misinformation.
16. Advocate for reform of the ESA to allow local forest decision makers to manage public lands.
17. Recognize sustained yield quotas and support USFS efforts to achieve them.

Fire and Fuels

Ravalli County is well-known for high wildfire risk relative to the rest of Montana. Though fire is a natural and necessary component of the county's native ecosystems, uncontrolled wildland fire often poses a significant risk to people and property, necessitating proactive and effective fire management. Wildland fire is considered to be any non-structural fire occurring in vegetation or natural fuels (NWCG 2023). Prescribed fires occur under planned and regulated conditions to meet specific management objectives, such as hazardous fuels reduction or habitat improvement (NWCG 2023). Historic fire suppression throughout Ravalli County has resulted in a buildup of fuels that increases the likelihood of uncharacteristically large and severe wildfire events. In addition to fuels buildup, warming seasonal temperatures, reduced winter precipitation, earlier snowmelt, and increasing frequency of human ignitions have facilitated longer and more severe fire seasons than in decades past (North et al. 2015; Parks et al. 2016; Parks and Abatzoglou 2020; Westerling et al. 2006; Morgan, Heyerdahl, and Gibson 2008; Wasserman and Mueller 2023). These large and severe wildfire events can cause various negative impacts including degraded air quality due to smoke, chronic soil erosion, degraded water resources, increased greenhouse gas emissions, wildlife habitat fragmentation and degradation, reduced carbon storage, and loss of cultural and natural resources (Parks et al. 2016; Keane 2019).

In response to the present and growing threat of wildfire, Ravalli County updated the Ravalli County CWPP[11] in 2024, which contains a detailed overview of the County's wildfire risk along with recommended mitigations and priority actions. In addition to summarizing the wildfire risks to the County and recommending ways to mitigate those risks, the CWPP serves to make Ravalli County eligible for funding opportunities to implement the actions identified in the CWPP.

Many wildfires within Ravalli County result from human-caused ignitions, as shown in Figure 10, which illustrates the number and cause of wildland fire incidents from 2014 through 2024, with a notable increase in 2021.

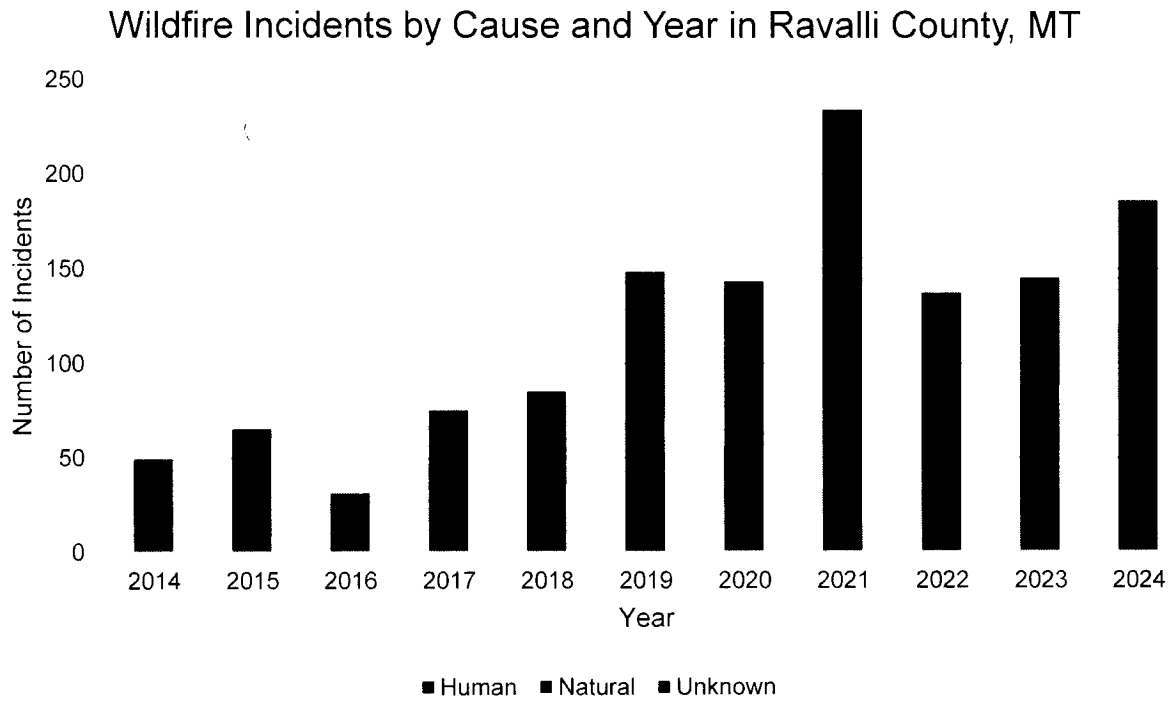

Figure 10 Wildland Fire Incidents in Ravalli County, MT (2014-2024)

Total area burned annually fluctuates according to ignition potential, fuel characteristics, and weather patterns. Since 1870, estimated acres burned within the County has fluctuated, with notable peaks from 1880 – 1889 (112,869), 1910 –1919 (69,935 acres), 2000 – 2009 (371,985 acres), and 2010 –2019 (105,775 acres) (Figure 10).

[11] https://ravalli.us/668/CWPP

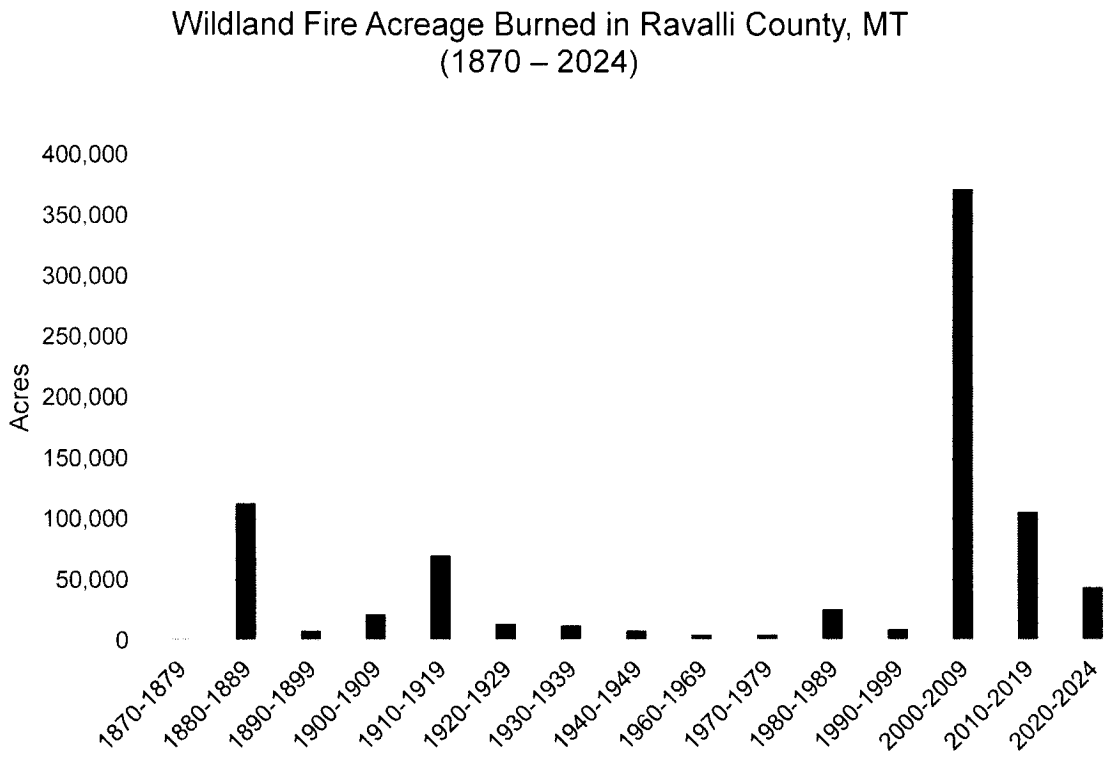

Figure 11 Wildland Acreage Burned in Ravalli County 1870-2024

Fuels consist of burnable vegetation that transmits wildfire across the landscape. Within Ravalli County, the top three vegetation cover types include evergreen forest, herbaceous/grasslands, and shrub/scrub (LANDFIRE 2023) (Table 10). These cover types are further categorized into two fuel vegetation types and five fuel models that cover ≥ 10% of the county (LANDFIRE 2023)(Table 10). Resulting fire behavior within these vegetated cover types is closely tied to fuel characteristics such as diameter, moisture content, and both horizontal and vertical continuity, all of which influence fire intensity and severity. Location-specific patterns of fire occurrences, frequency, size, severity, and sometimes vegetation and fire effects is termed a fire regime, of which there are five fire groups within the county with ≥ 10% coverage (LANDFIRE 2023) (Table 10).

Table 10 Vegetation and Fuel Data Summary for Types with >10% coverage of Ravalli County, MT

Data	Type	Acres	Percent of County
National Land Cover Database Cover Type	Evergreen Forest	769,239	50.08%
	Shrub/Scrub	422,182	27.49%
	Herbaceous/Grasslands	147,098	9.58%
Vegetation Condition Class	Vegetation Condition Class I.B	611,668	39.82%
	Vegetation Condition Class II.A	341,599	22.24%
	Vegetation Condition Class III.A	252,368	16.43%
Fuel Vegetation Type	Tr Rocky Mountain Lodgepole Pine Forest	274,053	17.84%
	Tr Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	156,376	10.18%
Fuel Model Type (40 Scott & Burgan Fire Behavior Fuel Models)	TU5: Very high load dry climate timber-shrub	299,940	19.53%
	GS2: Moderate load dry climate grass-shrub	282,388	18.38%
	TL3: Moderate load conifer litter	171,738	11.18%
	GR2: Low load dry climate grass	166,876	10.86%
	TU2: Moderate load humid climate timber-shrub	166,625	10.85%
Fire Regime Group	IV-B: Percent replacement fire greater than 66.7%, fire return interval 101-200 years	385,402	25.09%
	I-C: Percent replacement fire less than 66.7%, fire return interval 16-35 years	277,661	18.08%
	I-B: Percent replacement fire less than 66.7%, fire return interval 6-15 years	261,435	17.02%
	III-B: Percent replacement fire less than 66.7%, fire return interval 101-200 years	226,904	14.77%
	III-A: Percent replacement fire less than 80%, fire return interval 36-100 years	151,598	9.87%

Wildfire risk is determined by evaluating the intersection of wildfire hazard with the susceptibility of important resources and/or assets present throughout an area. Two wildfire risk metrics are most commonly used to illustrate risk; conditional and expected wildfire risk. Conditional wildfire risk does not incorporate burn probability and assumes a fire has already started, whereas expected wildfire risk evaluates long-term trends of fire activity and fuels data to incorporate the likelihood of a fire occurring. Figure 12 and Figure 13 illustrate the relative distribution of wildfire risk by land ownership. Notably, state and USFS lands have higher relative proportions of low Conditional Wildfire Risk compared to USFWS and private lands, which have higher proportions of High to Very High wildfire risk. Note that the percentages shown in the following figures are based on the total areas of each type of land ownership (i.e., 100% of USFWS land is 2,843 acres, whereas 100% of USFS land is over 1.1 million acres).

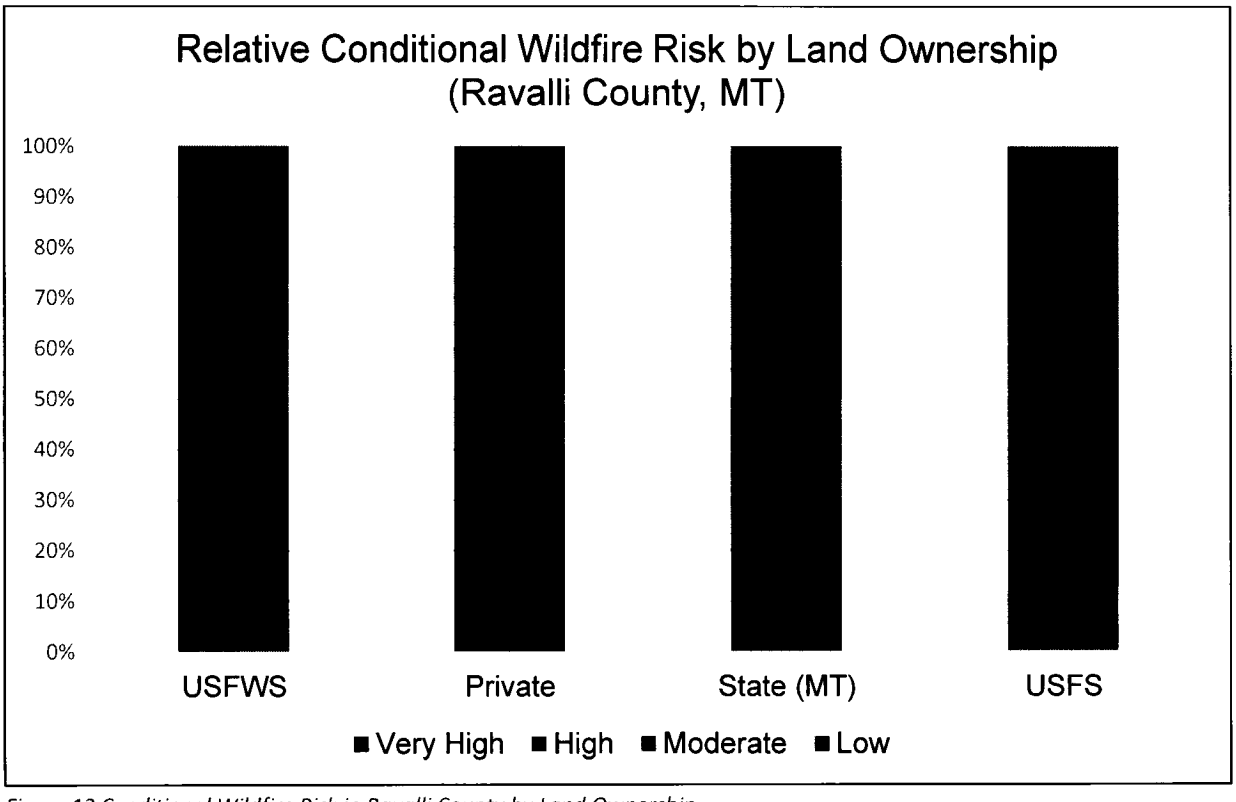

Figure 12 Conditional Wildfire Risk in Ravalli County by Land Ownership

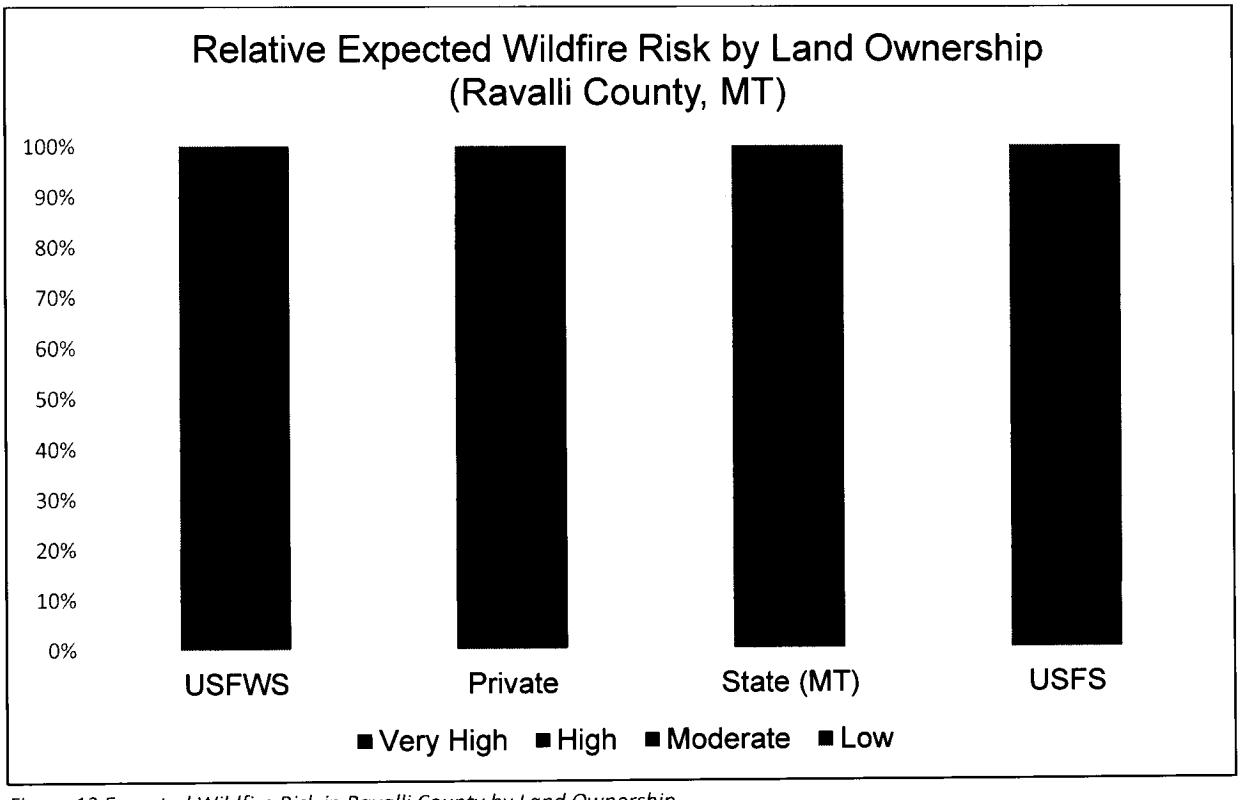

Figure 13 Expected Wildfire Risk in Ravalli County by Land Ownership

Resource Management Objectives

1. Manage fuels on federal and state lands within and adjacent to Ravalli County to promote resilient and healthy landscapes, protect communities from the threat of wildfire, and reduce the likelihood of uncharacteristically large, high severity wildfires.
2. Consider impacts to scenery, recreation, wildlife habitat, and migration corridors and mitigate such impacts where possible when managing fuels on federal and state lands.

Strategies

1. Collaborate with the BNF to identify locations for strategic fuelbreaks that will protect at-risk communities and increase firefighter safety and efficacy.
2. Ensure the county's CWPP is considered during the BNF forest plan revision process.
3. Implement projects identified in the county's CWPP and update the CWPP to add new projects when they are identified.
4. Maintain CWPP currency (update every 5 years) to maximize funding opportunities.
5. Submit amicus briefs in support of fuel management projects.
6. Support BNF-proposed hazardous fuel reduction and forest health management projects, including prescribed fire treatments that meet the objectives and strategies of this plan.
7. Collaborate with the forest during project design to ensure community health and safety needs are being adequately considered and addressed and that the best available scientific information is being used to plan these projects.
8. Coordinate with the BNF in implementing the National Cohesive Wildland Fire Management Strategy.
9. Support federal funding directed to the Forest Service and USDA so that they have the resources necessary to proactively address hazardous fuels and respond to wildfire incidents.
10. Participate in wildfire response efforts and employ wildland fire experts, as needed, to help ensure decisions to suppress or not suppress a fire are being made with due consideration to the health, safety, and wellbeing of county residents.
11. Encourage the strategic use of prescribed fire in Wilderness areas to mitigate wildfire risk to adjacent areas/communities and to allow for the safe reintroduction of fire to these Wilderness areas.
12. Support the implementation of effective fuels management that provides economic benefits and jobs to the surrounding community as well as improving forest health and community safety.
13. Advocate for revisions to federal statutes, such as the NEPA, ESA, and Equal Access to Justice Act, to facilitate the timely ability of local land managers to promote healthy forests and protect public health and safety from catastrophic wildfires.
14. Assist private landowners with firewise strategies and fire risk reduction resources.

Chapter 6: Fish and Wildlife

Fisheries

Resource Assessment

All waterbodies in Ravalli County are part of the Bitterroot River watershed (HUC 17010205). These rivers, streams, and reservoirs support fisheries composed primarily of native westslope cutthroat trout, whitefish, bull trout, and non-native rainbow trout, brown trout, and brook trout. The mainstem Bitterroot River and West Fork of the Bitterroot River include designated bull trout critical habitat. Other native species include northern pikeminnow and several species of sculpin, dace, and suckers. Additional non-native species include northern pike and largemouth bass, though largemouth bass are rare in the Bitterroot River and are typically found in isolated backwater habitats (MT FWP 2025b; Lindstrom 2025). Although smallmouth bass have recently been confirmed in the Bitterroot River in Missoula County, they are found in low densities and have not been detected in Ravalli County (Lindstrom 2025). Except for reservoirs, backcountry lakes, and private ponds, all fisheries in Ravalli County are supported entirely through natural reproduction (MT FWP 2025b).

The Bitterroot River bisects Ravalli County and is formed by the confluence of the West Fork and East Fork of the Bitterroot River. The lower West Fork of the Bitterroot River is a tailwater and flows are controlled by releases from West Fork Dam and Painted Rocks Reservoir. This segment supports healthy populations (approximately 400–600 fish per mile) of westslope cutthroat trout as well as several non-native game species (MT FWP 2025b; Lindstrom 2022). Above Painted Rocks Reservoir, the West Fork supports a population of genetically pure westslope cutthroat trout and has been an area of focus for MT FWP and conservation organizations aiming to preserve the resource (MT FWP 2023). The East Fork of the Bitterroot River is a freestone river and supports a wide variety of fishing opportunities and fish species including brown trout, rainbow trout, brook trout, mountain whitefish, and bull trout. In the northern half of the county, small tributaries originating in the Bitterroot Mountains flow most of their length through USFS lands. These streams are characterized by steep grades in tight valleys and join the mainstem Bitterroot River shortly after leaving the mountains. Small tributaries originating in the Sapphire Mountains are generally characterized by flatter gradients and often flow through several miles of privately-owned agricultural lands on the valley floor before reaching the Bitterroot River.

The Bitterroot River and West Fork of the Bitterroot River support highly renowned recreational fisheries for brown trout, rainbow trout, and westslope cutthroat trout. Angling tourism supports dozens of local outfitter services, sporting goods stores, restaurants, and lodging businesses throughout Ravalli County. As highly valuable economic and recreational resources, MT FWP manages these fisheries for sustainable populations of brown, rainbow, and westslope cutthroat trout, with management tools including fishing regulations and flow management. Painted Rocks Reservoir and Lake Como supply water for both irrigation and instream flow reservations in the Bitterroot River. MT FWP works collaboratively with the Bitterroot Water

Commissioner to balance the needs of instream flows and agricultural use when water resources are limited. MT FWP has 15,000 acre-feet of water reserved in Painted Rocks Reservoir which is used to manage flow in the Bitterroot River throughout the summer. Once these resources have been exhausted, a water supply of 3,000 acre-feet in Lake Como provides additional flow supplementation for approximately one month in the fall (Lindstrom 2025).

These management strategies also help to conserve bull trout populations and their designated critical habitat which continues to be a management priority throughout the mainstem and West Fork of the Bitterroot River (MT FWP 2023).

Resource Management Objectives

1. Support bull trout recovery.
2. Maintain and enhance aquatic habitat that supports diverse aquatic species and strong fisheries, including through periods of drought and low flows.
3. Maintain and enhance recreational fishing opportunities and fishing guide/outfitting that contribute to the local economy.

Strategies

1. Coordinate with MT FWP and other relevant agencies to maintain and enhance Ravalli County's fisheries and associated water resources.
2. Support programs and projects that maintain healthy forests for productive watersheds, including projects that make the forest more resilient to the threats of catastrophic wildfires and insect infestation, both of which can lead to substantial erosion and excessive turbidity.
3. Work with MT FWP to support the maintenance and enhancement of public access to fisheries.
4. Support instream flows for fisheries protection.

Wildlife

Resource Assessment

General Wildlife

Ravalli County is well-known for abundant and diverse wildlife populations supported by large tracts of open spaces and availability of intact and connected native habitat ranging from the Bitterroot River floodplain to subalpine forest. These diverse habitats maintain conditions that support a variety of wildlife. Species commonly observed throughout the county include white-tailed and mule deer (*Odocoileus virginianus*; *Odocoileus hemionus*), elk (*Cervus canadensis*), songbirds, waterfowl, upland birds, and a variety of small mammals, reptiles, amphibians, and invertebrates. The Bitterroot Valley also contains a variety of important big game habitats such as winter and summer range for elk and mule deer along with seasonal migratory pathways (MT FWP 2024). Table 11 provides an overview of available big game general and winter habitat acreage throughout the county.

Table 11 Big Game Ungulate Species with Mapped General and Winter Habitat within Ravalli County, MT

Common Name	Scientific Name	General Habitat (Acres)	Winter Habitat (Acres)
Bighorn sheep	*Ovis canadensis*	267,493	73,853
Elk	*Cervus canadensis*	728,650	705,068
Moose	*Alces alces*	973,883	748,165
Mule deer	*Odocoileus hemionus*	874,769	658,986
White-tailed deer	*Odocoileus virginianus*	71,578	548,848
Mountain goat	*Oreamnos americanus*	503,607	194,885

The prevalence of important wildlife habitat areas and growing threats have spurred focused efforts to maintain habitat quality, quantity, and continuity to ensure the continued presence of sustainable and resilient wildlife populations. In the State Wildlife Action Plan (SWAP), MT FWP identifies several key threats to wildlife and habitat within the Bitterroot Valley including: rapid population growth; habitat fragmentation; vehicle collisions; and habitat degradation due to noxious weeds, annual grasses, conifer encroachment, and unsustainable land use practices (MT FWP 2024). Ongoing and potential actions to address these challenges include land conservation projects and conservation easements, strategic wildlife exclusion fencing and wildlife crossing structures spanning US-93, and invasive weed treatments in ungulate winter range.

Hunting & Trapping

The abundant wildlife and swathes of accessible public lands support a variety of industries rooted in the outdoors, including hunting and trapping. These traditional activities represent an important part of the area's cultural history and lifestyle and remain a popular activity for both residents and visitors. Ravalli County also offers a range of quality hunting opportunities, particularly for big game species such as mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), and elk (*Cervus canadensis*). In addition to these common big game species, the dynamic landscape provides hunting and trapping opportunities for many other species including black bear (*Ursus americanus*), turkey (*Meleagris gallopavo*), furbearers, wolves (*Canis lupus*), moose (*Alces alces*), mountain goat (*Oreamnos americanus*), bighorn sheep (*Ovis canadensis*), mountain lion (*Puma concolor*), waterfowl, and upland birds. The practice of both hunting and trapping continues to play an important role in maintaining traditional skills and cultivating appreciation and respect for the county's wildlife species and their habitats.

In accordance with the Hellgate Treaty (July 16, 1855), the Confederated Salish and Kootenai Tribe (CSKT) have reserved rights to hunt and fish on "open and unclaimed lands" outside of the Flathead Reservation on their ancestral lands, which includes Ravalli County. *Open and unclaimed lands* generally means federal public lands that are not set aside for uses incompatible with hunting, like a national park. Tribal hunting and fishing regulations are

generally set by the Tribe, typically in consultation with MT FWP. Regulatory and enforcement jurisdiction can be complex for off-reservation hunting, and the overall impact of reserved treaty right hunting on wildlife populations within the county is not well understood.

Wildlife Viewing

Nationally, the appreciation of wildlife in a non-consumptive manner is growing, and Ravalli County offers many excellent opportunities to engage with this activity (Manfredo et al. 2018). In 2022, wildlife watching generated $250.2 billion dollars in expenditures nationwide, compared to $45.2 billion and $99.4 billion for hunting and fishing, respectively (USFWS 2022).

Specifically, the Lee Metcalf National Wildlife Refuge (NWR) and Teller Wildlife Refuge are known attractions for both locals and tourists to view and/or photograph birds and other wildlife species (Ravalli County Economic Development Authority 2018). Tourists and locals who participate in wildlife watching generate significant economic benefits to local communities through sales and employment, resulting in billions of dollars generated within NWRs alone (Carver and Caudill 2013; Caudill 2022; Caudill and Carver 2019). Surveys conducted by the USFWS in 2022 in the Lee Metcalf NWR found that 32% of visitors cited birdwatching and wildlife viewing as the primary reason for their visit (Dietsch, Sexton, and Gutierrez 2023). Nonlocal visitors were also found to comprise 74% of all expenditures associated with visitation to this NWR, primarily consisting of food, drink, and lodging.

Though data is lacking for other wildlife hotspots, such as the BNF and state lands, it is expected that these areas contribute economic benefits for the County by attracting both local and non-local visitors to view wildlife.

Resource Management Objectives

1. Maintain and improve wildlife habitat.
2. Maintain and enhance opportunities for wildlife viewers on public lands while balancing other uses.
3. Maintain healthy and sustainable wildlife populations.
4. Support the implementation of mitigation measures that effectively reduce human-wildlife conflict.
5. Support the hunting and trapping heritage within Ravalli County.
6. Maintain and enhance recreational hunting and trapping opportunities and commercial guiding/outfitting that contribute to the local economy.

Strategies

1. Coordinate wildlife habitat improvements on federal and state lands to:
    a. Sustain healthy and diverse native wildlife species throughout the county;
    b. Sustain viable populations of game species;
    c. Protect wetland and riparian area habitat for waterfowl, furbearers, and a diversity of other game and non-game species; and

   d. Protect and enhance important routes and corridors for wildlife habitat connectivity.
2. Coordinate with federal and state agencies in consultation with affected landowners, lessees, and permittees to develop specific wildlife management plans.
3. Collaborate with MT FWP during SWAP update processes.
4. Support efforts to plan and construct strategic wildlife crossings within Ravalli County.
5. Coordinate with federal and state agencies to implement responsible trapping and recreation practices that facilitate the coexistence of multiple uses within Ravalli County's state and federal lands.
6. Coordinate with federal and state agencies to identify and implement appropriate mitigations to reduce human-wildlife conflict and promote coexistence through effective mitigations such as securing wildlife attractants, employing hazing and/or deterrents, and public education.
7. Work with MT FWP and the Fish and Wildlife Commission to understand the population objective setting process for game species and weigh in during these processes to ensure the county's needs and priorities are adequately considered.
8. Coordinate with the CSKT and MT FWP to understand Tribal hunting and fishing rights in Ravalli County, Tribal hunting regulations, and the impact of Tribal hunting within the county. Work collaboratively to help integrate Tribal and non-Tribal hunting systems and improve game management within the county.
9. Ensure the BNF fully considers this document and Article IX, Section 7 of the Montana Constitution, which preserves the opportunity to harvest wild fish and wild game animals for individual citizens of the state.
10. Advocate for reform of the ESA to protect recreational use and management of public lands to protect hunting, fishing and trapping activities.

Special Status Species

Resource Assessment

Activities undertaken within Ravalli County may have the potential to affect multiple wildlife species with various degrees of legal protections including species or designated critical habitat listed under the ESA, Montana Species of Concern (SOC) (Species of Greatest Conservation Need [SGCN]), U.S. Forest Service Regional Forester's Sensitive Species (USFS RFSS), U.S. Forest Service Species of Conservation Concern (SCC), migratory birds as defined by the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703-712), and bald and golden eagles as defined by the Bald and Golden Eagle Protection Act (BGEPA), as amended (16 U.S.C. 668-668d).

Proposed, Threatened, and Endangered Species

The following table summarizes federally listed species and designated critical habitat with the potential to be affected by project activities occurring within Ravalli County (Table 12) (USFWS 2025a). Six federally listed species and two species proposed for listing have been documented

within the County and have the potential to occur within Ravalli County or adjacent areas of impact. Bull trout (*Salvelinus confluentus*) designated critical habitat occurs in segments of multiple waterbodies within Ravalli County (see Fisheries).

Table 12 Federally Listed Species and Designated Critical Habitat within Ravalli County, MT

Common Name	Scientific Name	Status	Potential Occurrence in Ravalli County[1]	Critical Habitat Present in Ravalli County[2]?
Canada lynx	*Lynx canadensis*	Threatened	Yes*	No
Grizzly bear	*Ursus arctos horribilis*	Threatened	Yes*	No
North American wolverine	*Gulo gulo luscus*	Threatened	Yes	No
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	Yes	No
Bull trout	*Salvelinus confluentus*	Threatened	Yes	Yes
Monarch butterfly	*Danaus plexippus*	Proposed Threatened	Yes	No
Suckley's cuckoo bumble bee	*Bombus suckleyi*	Proposed Endangered	Yes	No
Whitebark pine	*Pinus albicaulis*	Threatened	Yes	No

* Canada lynx and grizzly bear are most likely to occur as transient individuals within Ravalli County.
Sources: [1] (MTNHP 2025b), [2] (USFWS 2025a)

Montana Species of Concern/Species of Greatest Conservation Need

MT FWP published its SWAP in 2015, which identifies community types, focal areas, and species with significant issues that warrant conservation attention, such as Species of Greatest Conservation Need (SGCN) (MT FWP 2024, 2015). The SWAP adopts all Montana Species of Concern (SOC) as SGCN, defining SOC as native Montana animals which are considered to be "at risk" due to declining population trends, habitat threats, and/or restricted distribution (MTNHP 2024). The list of SOCs is reviewed annually, with any changes corresponding with the SWAP's SGCN list. Invertebrate species are not included within the SOC/SGCN list, with the exception of mussel and crayfish (MT FWP 2015). As of the most recent update on September 30, 2024, there were 225 SOC (i.e., SGCN), 93 Potential SOC (PSOC), and 64 Special Status Species[12] within the state (MTNHP 2024). Ravalli County has 89 SOC species, including 48 birds, 18 invertebrates, 14 mammals, four fish, three amphibians, and two reptiles (Table 13).

[12] Species with some legal protections in place, but are otherwise not Montana Species of Concern (MTNHP 2024).

Table 13 Montana Species of Concern/Species of Greatest Conservation Need Documented in Ravalli County, MT

Common Name	Scientific Name	MT Status
Mammals		
American Bison	*Bos bison*	SOC
Canada Lynx	*Lynx canadensis*	SOC
Fisher	*Pekania pennanti*	SOC
Fringed Myotis	*Myotis thysanodes*	SOC
Grizzly Bear	*Ursus arctos*	SOC
Hoary Marmot	*Marmota caligata*	PSOC
Idaho Pocket Gopher	*Thomomys idahoensis*	PSOC
Little Brown Myotis	*Myotis lucifugus*	SOC
Long-eared Myotis	*Myotis evotis*	SOC
Long-legged Myotis	*Myotis volans*	SOC
North American Porcupine	*Erethizon dorsatum*	PSOC
North American Water Vole	*Microtus richardsoni*	PSOC
Northern Bog Lemming	*Synaptomys borealis*	SOC
Northern Hoary Bat	*Lasiurus cinereus*	SOC
Preble's Shrew	*Sorex preblei*	SOC
Silver-haired Bat	*Lasionycteris noctivagans*	SOC
Townsend's Big-eared Bat	*Corynorhinus townsendii*	SOC
Wolverine	*Gulo gulo*	SOC
Birds		
American Bittern	*Botaurus lentiginosus*	SOC
American Goshawk	*Accipiter atricapillus*	SOC
American White Pelican	*Pelecanus erythrorhynchos*	SOC
Barrow's Goldeneye	*Bucephala islandica*	PSOC
Black Rosy-Finch	*Leucosticte atrata*	SOC
Black Swift	*Cypseloides niger*	SOC
Black Tern	*Chlidonias niger*	SOC
Black-and-white Warbler	*Mniotilta varia*	PSOC
Black-backed Woodpecker	*Picoides arcticus*	SOC
Black-crowned Night Heron	*Nycticorax nycticorax*	SOC
Black-necked Stilt	*Himantopus mexicanus*	SOC
Bobolink	*Dolichonyx oryzivorus*	SOC
Boreal Owl	*Aegolius funereus*	PSOC
Brewer's Sparrow	*Spizella breweri*	SOC
Broad-tailed Hummingbird	*Selasphorus platycercus*	PSOC
Brown Creeper	*Certhia americana*	SOC
Burrowing Owl	*Athene cunicularia*	SOC
Caspian Tern	*Hydroprogne caspia*	SOC
Cassin's Finch	*Haemorhous cassinii*	SOC
Clark's Grebe	*Aechmophorus clarkii*	SOC
Clark's Nutcracker	*Nucifraga columbiana*	SOC

Common Name	Scientific Name	MT Status
Common Loon	*Gavia immer*	SOC
Common Poorwill	*Phalaenoptilus nuttallii*	PSOC
Common Tern	*Sterna hirundo*	SOC
Evening Grosbeak	*Coccothraustes vespertinus*	SOC
Ferruginous Hawk	*Buteo regalis*	SOC
Flammulated Owl	*Psiloscops flammeolus*	SOC
Forster's Tern	*Sterna forsteri*	SOC
Franklin's Gull	*Leucophaeus pipixcan*	SOC
Golden Eagle	*Aquila chrysaetos*	SOC
Gray-crowned Rosy-Finch	*Leucosticte tephrocotis*	SOC
Great Blue Heron	*Ardea herodias*	SOC
Great Gray Owl	*Strix nebulosa*	PSOC
Green-tailed Towhee	*Pipilo chlorurus*	SOC
Harlequin Duck	*Histrionicus histrionicus*	SOC
Hooded Merganser	*Lophodytes cucullatus*	PSOC
Horned Grebe	*Podiceps auritus*	SOC
Least Tern	*Sternula antillarum*	SOC
LeConte's Sparrow	*Ammospiza leconteii*	SOC
Lewis's Woodpecker	*Melanerpes lewis*	SOC
Loggerhead Shrike	*Lanius ludovicianus*	SOC
Long-billed Curlew	*Numenius americanus*	SOC
Ovenbird	*Seiurus aurocapilla*	PSOC
Pacific Wren	*Troglodytes pacificus*	SOC
Pileated Woodpecker	*Dryocopus pileatus*	SOC
Pinyon Jay	*Gymnorhinus cyanocephalus*	SOC
Red-headed Woodpecker	*Melanerpes erythrocephalus*	SOC
Rufous Hummingbird	*Selasphorus rufus*	PSOC
Sage Thrasher	*Oreoscoptes montanus*	SOC
Sagebrush Sparrow	*Artemisiospiza nevadensis*	SOC
Sharp-tailed Grouse	*Tympanuchus phasianellus*	SOC
Short-eared Owl	*Asio flammeus*	PSOC
Solitary Sandpiper	*Tringa solitaria*	SOC
Trumpeter Swan	*Cygnus buccinator*	SOC
Varied Thrush	*Ixoreus naevius*	SOC
Veery	*Catharus fuscescens*	SOC
Western Screech-Owl	*Megascops kennicottii*	PSOC
White-faced Ibis	*Plegadis chihi*	SOC
Yellow-billed Cuckoo	*Coccyzus americanus*	SOC
Reptiles		
Northern Alligator Lizard	*Elgaria coerulea*	SOC
Western Skink	*Plestiodon skiltonianus*	SOC
Amphibians		

Common Name	Scientific Name	MT Status
Coeur d'Alene Salamander	*Plethodon idahoensis*	SOC
Northern Leopard Frog	*Lithobates pipiens*	SOC
Rocky Mountain Tailed Frog	*Ascaphus montanus*	PSOC
Western Toad	*Anaxyrus boreas*	SOC
Fish		
Brook Stickleback	*Culaea inconstans*	PSOC
Bull Trout	*Salvelinus confluentus*	SOC
Northern Pikeminnow	*Ptychocheilus oregonensis*	SOC
Rocky Mountain Cutthroat Trout	*Oncorhynchus virginalis*	SOC
Westslope Cutthroat Trout	*Oncorhynchus lewisi*	SOC
Invertebrates		
Lake Darner	*Aeshna eremita*	PSOC
Sedge Darner	*Aeshna juncea*	PSOC
Vivid Dancer	*Argia vivida*	PSOC
Suckley's Cuckoo Bumble Bee	*Bombus suckleyi*	SOC
Northern Rocky Mountains Refugium Mayfly	*Caudatella edmundsi*	PSOC
Monarch	*Danaus plexippus*	SOC
Marbled Jumping-slug	*Hemphillia danielsi*	SOC
Hooked Snowfly	*Isocapnia crinita*	SOC
Flame Skimmer	*Libellula saturata*	PSOC
A Millipede	*Lophomus laxus*	PSOC
Magnum Mantleslug	*Magnipelta mycophaga*	SOC
Western Pearlshell	*Margaritifera falcata*	SOC
Sinuous Snaketail	*Ophiogomphus occidentis*	PSOC
Oblique Ambersnail	*Oxyloma nuttallianum*	SOC
Indra Swallowtail	*Papilio indra*	PSOC
Humped Coin	*Polygyrella polygyrella*	SOC
Thinlip Tightcoil	*Pristiloma idahoense*	SOC
Smoky Taildropper	*Prophysaon humile*	SOC
Fir Pinwheel	*Radiodiscus abietum*	PSOC
California Darner	*Rhionaeschna californica*	PSOC
Potter's Free-living Caddisfly	*Rhyacophila potteri*	SOC
Northern Rocky Mountains Refugium Caddisfly	*Sericostriata surdickae*	PSOC
Ringed Emerald	*Somatochlora albicincta*	PSOC
Mountain Emerald	*Somatochlora semicircularis*	PSOC
Brush-tipped Emerald	*Somatochlora walshii*	SOC
A Cave Obligate Amphipod	*Stygobromus montanensis*	SOC
A Cave Obligate Amphipod	*Stygobromus obscurus*	SOC
Worn Stygobromid	*Stygobromus tritus*	SOC

Common Name	Scientific Name	MT Status
Lolo Sallfly	*Sweltsa durfeei*	SOC
Lyre Mantleslug	*Udosarx lyrata*	SOC
Sheathed Slug	*Zacoleus idahoensis*	SOC

U.S. Forest Service Special Status Species

Part 2670.22 of the U.S. Forest Service Manual defines sensitive species on USFS-administered lands as those for which population viability is a concern as evidenced by a significant downward trend in population or a significant downward trend in habitat capacity. As national forests revise land management plans under the 2012 planning rule, sensitive species will be replaced by Species of Conservation Concern (SCC). Sensitive species are defined as a species, other than federally recognized Threatened, Endangered, Proposed, or Candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long term in the plan area (36 CFR § 219.9). Responsibilities of lands managed by the USFS and management guidelines for USFS special status species can be found in Chapter 2670 of the Forest Service Manual. There are nine animal sensitive species and 35 plant sensitive species known to occur within the BNF in Ravalli County (MTNHP 2024) (Table 14).

Table 14 USFS sensitive animal and plant species of the Bitterroot National Forest

Common Name	Scientific Name	USFS – Status (BNF)
Mammals		
Little Brown Myotis	*Myotis lucifugus*	Sensitive – Known in Forests (SK)
Northern Bog Lemming	*Synaptomys borealis*	Sensitive – Known in Forests (SK)
Birds		
Black Swift	*Cypseloides niger*	Sensitive – Known in Forests (SK)
Harlequin Duck	*Histrionicus histrionicus*	Sensitive – Migratory in Forests (SM)
Amphibians		
Coeur d'Alene Salamander	*Plethodon idahoensis*	Sensitive – Known (SK)
Western Toad	*Anaxyrus boreas*	Sensitive – Known in Forests (SK)
Invertebrates		
Western Bumble Bee	*Bombus occidentalis*	Sensitive – Known in Forests (SK)
Monarch	*Danaus plexippus*	Sensitive – Migratory in Forests (SM)
Western Pearlshell	*Margaritifera falcata*	Sensitive – Known in Forests (SK)
Plants		
Alpine Collomia	*Collomia debilis var. camporum*	Sensitive – Known in Forests (SK)
Alpine Foxtail Lichen	*Nodobryoria subdivergens*	Sensitive – Known in Forests (SK)
Bitterroot Bladderpod	*Physaria humilis*	Sensitive – Known in Forests (SK)
Bitterroot Draba	*Draba daviesiae*	Sensitive – Known in Forests (SK)
California False-hellebore	*Veratrum californicum*	Sensitive – Known in Forests (SK)
Coville Indian Paintbrush	*Castilleja covilleana*	Sensitive – Known in Forests (SK)

Common Name	Scientific Name	USFS – Status (BNF)
Crested Shieldfern	*Dryopteris cristata*	Sensitive – Known in Forests (SK)
Dense-leaf Draba	*Draba densifolia*	Sensitive – Known in Forests (SK)
Dwarf Purple Monkeyflower	*Mimulus nanus*	Sensitive – Known in Forests (SK)
English Sundew	*Drosera anglica*	Sensitive – Known in Forests (SK)
Evermann Fleabane	*Erigeron evermannii*	Sensitive – Known in Forests (SK)
Hollyleaf Clover	*Trifolium gymnocarpon*	Sensitive – Known in Forests (SK)
Idaho Goldenweed	*Tonestus aberrans*	Sensitive – Known in Forests (SK)
Lanceleaf Moonwort	*Botrychium lanceolatum*	Sensitive – Known in Forests (SK)
Least Moonwort	*Botrychium simplex*	Sensitive – Known in Forests (SK)
Lemhi Beardtongue	*Penstemon lemhiensis*	Sensitive – Known in Forests (SK)
Meesia Moss	*Meesia triquetra*	Sensitive – Known in Forests (SK)
Mission Mountain kittentails	*Synthyris canbyi*	Sensitive – Known in Forests (SK)
Narrowleaf Peatmoss	*Sphagnum angustifolium*	Sensitive – Known in Forests (SK)
Payette Beardtongue	*Penstemon payettensis*	Sensitive – Known in Forests (SK)
Pink Coil-beaked Lousewort	*Pedicularis contorta var. ctenophora*	Sensitive – Known in Forests (SK)
Pointed Broom Sedge	*Carex scoparia*	Sensitive – Known in Forests (SK)
Primrose Monkeyflower	*Mimulus primuloides*	Sensitive – Known in Forests (SK)
Puzzling Rockcress	*Sandbergia perplexa*	Sensitive – Known in Forests (SK)
Sandweed	*Athysanus pusillus*	Sensitive – Known in Forests (SK)
Sapphire Rockcress	*Boechera fecunda*	Sensitive – Known in Forests (SK)
Scalepod	*Idahoa scapigera*	Sensitive – Known in Forests (SK)
Small Onion	*Allium parvum*	Sensitive – Known in Forests (SK)
Spiny Greasebush	*Glossopetalon spinescens*	Sensitive – Known in Forests (SK)
Stalk-leaved Monkeyflower	*Mimulus ampliatus*	Sensitive – Known in Forests (SK)
Storm Saxifrage	*Micranthes tempestiva*	Sensitive – Known in Forests (SK)
Tapertip Onion	*Allium acuminatum*	Sensitive – Known in Forests (SK)
Western Joepye-weed	*Ageratina occidentalis*	Sensitive – Known in Forests (SK)
Western Pearl-flower	*Heterocodon rariflorum*	Sensitive – Known in Forests (SK)
Woolly-head Clover	*Trifolium eriocephalum*	Sensitive – Known in Forests (SK)

Migratory Birds

The MBTA, as amended, prohibits the taking, killing, possession, transportation, import, and export of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. The term "take" is defined by regulation as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." Avian species protected by the MBTA are listed by the USFWS in 50 CFR § 10.13. The 2021 Birds of Conservation Concern (BCCs) report identifies migratory and some non-migratory bird species (excluding those already designated as federally threatened or

endangered) that represent USFWS' high conservation priorities.[13] There are 21 BCCs with the potential to occur within Ravalli County (Table 15).

EO 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds" of 2001 clarified the responsibilities of federal agencies regarding migratory bird conservation and directed federal agencies to evaluate the effects of federal actions on migratory birds with an emphasis on species of concern. The EO also directed Federal agencies to develop a Memorandum of Understanding with the USFWS regarding their role with respect to the MBTA, and the BGEPA. USFWS has also compiled resources detailing standard avoidance and minimization measures that promote the goal of minimizing impacts to all birds, including migratory birds, when planning projects that overlap avian habitat areas.[14,15]

Table 15 Birds of Conservation Concern with Potential to Occur within Ravalli County, MT

Common Name	Scientific Name	BCC Status	Breeding Season
Bald Eagle	*Haliaeetus leucocephalus*	No	Jan 1 to Aug 31
Black Rosy-finch	*Leucosticte atrata*	No	Jun 15 to Aug 31
Black Swift	*Cypseloides niger*	Yes	Jun 15 to Sep 10
Black Tern	*Chlidonias niger surinamenisis*	Yes	May 15 to Aug 20
Bobolink	*Dolichonyx oryzivorus*	Yes	May 20 to Jul 31
Broad-tailed Hummingbird	*Selasphorus platycercus*	Yes	May 25 to Aug 21
California Gull	*Larus californicus*	Yes	Mar 1 to Jul 31
Calliope Hummingbird	*Selasphorus calliope*	Yes	May 1 to Aug 15
Cassin's Finch	*Haemorhous cassinii*	Yes	May 15 to Jul 15
Clark's Grebe	*Aechmophorus clarkii*	Yes	Jun 1 to Aug 31
Evening Grosbeak	*Coccothraustes vespertinus*	Yes	May 15 to Aug 10
Flammulated Owl	*Psiloscops flammeolus*	Yes	May 10 to Aug 15
Franklin's Gull	*Leucophaeus pipixcan*	Yes	May 1 to Jul 31
Golden Eagle	*Aquila chrysaetos*	Yes	Jan 1 to Aug 31
Lesser Yellowlegs	*Tringa flavipes*	No	Breeds elsewhere
Lewis's Woodpecker	*Melanerpes lewis*	Yes	Apr 20 to Sep 30
Long-eared Owl	*Asio otus*	Yes	Mar 1 to Jul 15
Olive-sided Flycatcher	*Contopus cooperi*	Yes	May 20 to Aug 31
Rufous Hummingbird	*Selasphorus rufus*	Yes	Apr 15 to Jul 15
Thick-billed Longspur	*Rhynchophanes mccownii*	Yes	May 1 to Aug 15
Western Grebe	*Aechmophorus occidentalis*	Yes	Jun 1 to Aug 31
Williamson's Sapsucker	*Sphyrapicus thyroideus nataliae*	Yes	May 1 to Jul 31

Bald and Golden Eagles

As both bald eagles and golden eagles are protected under the MBTA and BGEPA, and because they are particularly sensitive to disturbance during the breeding season, these species are

[13] https://www.fws.gov/media/birds-conservation-concern-2021

[14] https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

[15] https://www.fws.gov/media/nationwide-avoidance-minimization-measures-birds

afforded further protection.[16] The USFWS recommends seasonal and spatial buffers for raptors, as well as recommended steps for addressing eagles in project planning.[17] The State of Montana also outlines management guidelines pertaining to bald eagle (Montana Bald Eagle Working Group 1986, 2010).

Resource Management Objectives

1. Ensure wildlife management in Ravalli County is in accordance with all applicable federal and state laws and regulations.
2. Ensure meaningful participation of local businesses in all phases of planning, recovery, and mitigation related to federally listed and other special status species. .

Strategies

1. Coordinate with the USFWS, USFS, and MT FWP in the proposed designation, delisting, re-introduction, and management of any species designated in any category or classification for protection or consideration of protection, under the Endangered Species Act or similar designations.
2. Evaluate and respond to any proposals to designate critical habitat within the county, ensuring that local economic and social impacts are adequately considered.
3. Develop a list of businesses within Ravalli County with relevant biological expertise and encourage federal and state agencies to contract with those companies when working within the county.
4. Oppose grizzly bear reintroduction in Ravalli County and allow natural recovery.
5. Support grizzly bear de-listing.

Predator Management

Resource Assessment

Many wildlife species present within Ravalli County are predatory to some degree, meaning that they hunt prey animals as a source of food. Montana statutes provide specific definitions of "predator" that apply to specific purposes. For the purposes of predator control, the Montana Code Annotated (MCA) defines predatory animals as coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and any other individual animal causing depredations upon livestock (MCA 81-7-101). Predator control consists of the destruction or control of predatory animals capable of killing, destroying, maiming, or injuring domestic livestock or poultry. Domestic or feral dogs (*Canis familiaris*) have the potential to harass (i.e., worry, chase, run after), destroy, or injure domestic livestock or poultry and may be considered a public nuisance subject to destruction and/or fines (MCA 81-7-401). The owner of a dog found to be responsible for damages to domestic livestock or poultry may be liable for said damages (MCA 81-7-402).

Coyote, weasels, civet cat (i.e., Western spotted skunk (*Spilogale gracilis*)), and skunk (i.e., Striped Skunk (*Mephitis mephitis*)) are identified as predators for the purposes of Fish and

[16] https://www.fws.gov/media/national-bald-eagle-management-guidelines

[17] https://www.fws.gov/birds/management/managed-species/eagle-management.php

Wildlife Criminal Provisions (MCA 87-6-101) and predator shooting. Predators, as defined by MCA 87-6-101, are not regulated by federal or state law or regulations and may be shot year-round in Montana without a license on all lands except state school-trust property, which requires a Conservation License. MT FWP also distinguishes "large predators" such as bears, mountain lions, and wolves and has outlined a *Policy for Management of Large Predators* (MCA 87-1-217). Ravalli County passed its *Large Predator Policy* on March 5, 2012, which outlines coordination between the county and appropriate agencies regarding large predators.

Predator management is a component of wildlife management by which the populations of predatory wildlife species are manipulated in order to protect livestock and/or agricultural products, to benefit prey species, or to increase the number of prey animals available for harvest by humans. Predators have the potential to harm or kill livestock such as cattle, sheep, goats, chickens, and horses. Both lethal and non-lethal methods exist to mitigate the risk of livestock predation by predators. Multiple agencies are involved with the management of predators, including the Wildlife Services program within the USDA's Animal and Plant Health Inspection Service (APHIS-WS), MT FWP, USFWS, and county government. Private citizens also have opportunities to engage in predator management via appropriately licensed and permitted hunting and trapping activities.

Prey animal populations fluctuate with births, deaths, and animal movements, and habitat plays a key role in determining the number of prey animals that an area can support. Predator management can be an effective method when predation is determined to be the primary limiting factor of a focal prey animal population. Appropriate methods for managing predator populations vary according to species and management objectives but can include hunting, trapping, snaring, aerial gunning, poison, relocation, sterilization, and diversionary feeding.

Resource Management Objectives

1. Reduce property damage and loss of livestock and domestic animals attributed to predatory wildlife.
2. Maintain sustainable predatory animal populations such that associated prey populations are also maintained at healthy and sustainable levels necessary to facilitate continued sustainable yield for both consumptive and non-consumptive wildlife uses.
3. Maintain sustainable harvest levels that promote healthy and sustainable prey populations, reducing the impact of predation.

Strategies

1. Educate county residents on non-lethal methods of protecting property, agricultural products, domestic animals, and livestock from predators.
2. Increase the carrying capacity and overall quality of wildlife habitat on state and federal lands through habitat improvements to reduce the impact of predation on prey populations.
3. Support regulations that control large predators to ensure ungulate populations meet objectives.

4. Assist county residents with predator management in conformance with applicable laws, regulations, and policies.
5. Coordinate with USFWS on grizzly bear relocations in Ravalli County.
6. Support large predator trapping and hunting regulations and quotas from MT FWP or USFWS that reduce large predator populations to ensure ungulate populations meet objectives and reduce human and livestock conflicts.
7. Coordinate with MT FWP, Department of Livestock, and other state agencies to manage predators and ensure state regulations support local predator management.
8. Coordinate with the Montana Livestock Loss Board to reimburse Ravalli County ranchers for predatory losses and promote the coexistence of ranchers, livestock, and wildlife.

Aquatic Invasive Species

Resource Assessment

There are several aquatic invasive species (AIS) present in Ravalli County. Curlyleaf pondweed (*Potamogeton crispus*) is distributed throughout all portions of the mainstem Bitterroot River in Ravalli County and New Zealand mudsnails (*Potamopyrgus antipodarum*) have been detected in the east channel of Mitchell Slough (a spring-fed side channel of the Bitterroot River) (MT FWP 2025b). Curlyleaf pondweed grows at shallow depths in slow to moderate currents and prefers sandy or hard bottom environments. It grows earlier in the season than native vegetation and can easily outcompete other species by growing in dense mats. Vegetation density can impede the flow in streams and through irrigation infrastructure. Additionally, mid-summer dieback and decay contributes to lowered dissolved oxygen concentrations which can have negative effects on aquatic organisms and fisheries (MTNHP 2025a).

New Zealand mudsnails tolerate a wide range of water temperatures, depths, current speeds, and substrates but prefer consistent environments such as tailwaters and spring fed streams. As grazers, they feed on aquatic vegetation and algae, thus competing with native macroinvertebrates that support aquatic food webs and ecosystem processes (Kerans et al. 2005; MTNHP 2025c).

Resource Management Objectives

1. Minimize opportunities for the introduction of AIS.
2. Control, reduce, and eliminate AIS currently existing within the county.

Strategies

1. Coordinate with MT FWP to support a robust system of watercraft inspection stations in Ravalli County.
2. Educate the public about the impacts of AIS and the importance of keeping them out of waterways.
3. Collaborate with state agencies, local research institutions, and others to identify appropriate means and methods for managing AIS existing in Ravalli County waterways.

Chapter 7: Water Resources

Ravalli County lies entirely within the Pend Oreille Basin (Hydrologic Unit Code [HUC] 170102) and the Bitterroot Subbasin (HUC 17010205). The East Fork Bitterroot River, which begins in the Sapphire Mountains to the north and the Pintler Mountains to the south, and the West Fork Bitterroot River, which begins in the Bitterroot Mountains, converge to form the Bitterroot River which flows north through Ravalli County. The Bitterroot River is fed by many east-west oriented tributaries including, but not limited to, Bear Creek, Big Creek, Blodgett Creek, Lost Horse Creek, Rock Creek, Skalkaho Creek, and Threemile Creek. The county relies on groundwater and the water of these and other surface water bodies to meet a variety of needs.

Irrigation and Related Infrastructure

Resource Assessment

Surface waters are the primary source of irrigation water in Ravalli County, but groundwater wells are also used for irrigation purposes. Much of the county's precipitation falls in its mountainous portions which are primarily managed by the USFS. This precipitation then infiltrates or runs off and is captured and stored to be used for irrigation. Several canals and ditches have been constructed in the county to distribute water, many of which originate on USFS lands and extend into the valley bottom onto private lands. Map 4 in Appendix B shows many of Ravalli County's waterbodies, irrigated lands, and associated infrastructure.

Resource Management Objectives

1. Manage watersheds to provide sufficient flows for agricultural purposes throughout the summer.
2. Ensure the reliability of irrigation infrastructure.
3. Ensure irrigation infrastructure is considered and protected during wildfire suppression planning efforts.

Strategies

1. Maintain and improve existing water resource infrastructure and access to existing infrastructure on state and federal lands.
2. Identify needs for new infrastructure and coordinate with the state and federal governments to construct water resource infrastructure that will benefit the county and its residents.
3. Coordinate with local irrigation districts to seek funding from state and federal agencies, such as the Natural Resources Conservation Service (NRCS), for projects designed to improve existing infrastructure and build new infrastructure that will improve the efficiency of water use.

Dams and Reservoirs

Resource Assessment

Reservoirs are typically used for surface water storage, flood control, hydroelectric power generation, recreation development, and irrigation. Many of the Bitterroot River tributaries discussed in the section above feed reservoirs which provide water for much of Ravalli County's irrigated lands. Most of these reservoirs are created by privately owned and operated dams located on USFS-managed lands, including 11 dams within designated Wilderness areas. Some of these dams were originally constructed as early as the late 1800s. One of the larger reservoirs in Ravalli County, Lake Como, was created following the construction of the Como Dam in 1910. The Como Dam is owned and operated by the Bitterroot Irrigation District with regulatory oversight provided by the U.S. Bureau of Reclamation.

Dams typically retain large quantities of water which hold spring runoff in the mountains for release later in the summer months, when demand tends to be greatest. MT FWP works collaboratively with the Bitterroot Water Commissioner to balance the needs of instream flows and agricultural use when water resources are limited. MT FWP has 15,000 acre-feet of water reserved in Painted Rocks Reservoir, which is used to manage flow in the Bitterroot River throughout summer. Once these resources have been exhausted, a water supply of 3,000 acre-feet in Lake Como provides additional flow supplementation for approximately one month in the fall (Lindstrom 2025). Water retention also helps recharge groundwater aquifers. While dams can accomplish this in a few isolated locations, the potential to retain and store water in the mountains can be greatly increased using natural storage or nature-based solutions. One inexpensive and effective example is reintroducing or maintaining healthy beaver populations that construct numerous small dams that, collectively, retain a significant amount of water. Alternatively, beaver dam analog structures can be constructed to accomplish the same thing, but this is harder to do on a large scale. These types of solutions also contribute to healthy, productive riparian habitats that benefit numerous species and the ecosystem as a whole.

Resource Management Objectives

1. Ensure that dams are effectively maintained and rehabilitated as necessary to provide for public safety (e.g., structural integrity and flood control) and controlled use throughout the summer.
2. Ensure that water-related projects on federal and state lands fully consider direct impacts to dams and reservoirs and indirect impacts to streamflows, recreation, irrigation, and water rights.
3. Ensure long term maintenance access and authority for wilderness dams, including access from the water.
4. Ensure dams are considered and protected during wildfire suppression planning efforts.
5. Ensure that impacts to water quality and quantity due to forest management projects are considered relative to the same types of impacts due to catastrophic wildfires.

Strategies

1. Coordinate with the USFS to maintain and improve access to dams and related infrastructure on USFS lands, particularly those located within designated Wilderness.
2. Seek to clarify, confirm, and solidify the rights of dam owners to maintain Wilderness dams and the methods (e.g., use of mechanize equipment) that may be used for maintenance and access. Support any Congressional acts that further this strategy and remove obstacles to the maintenance of dams and related infrastructure.
3. Support the use of natural storage and nature-based solutions, such as beavers and the installation of beaver dam analog structures, on federal and state lands to help hold runoff in the mountains longer, leading to increased and more reliable summer runoff.

Groundwater

Resource Assessment

The groundwater system in the Bitterroot Valley generally consists of three regional aquifers: the bedrock, deep basin-fill, and shallow basin-fill systems. The bedrock aquifer yields water from fractures. Groundwater conditions in the deep basin-fill aquifer system are generally semi-confined to confined due to interbedded layers. The shallow basin-fill aquifer is unconfined with groundwater elevations in wells typically 5 to 40 feet below the ground surface. Recharge and discharge of the groundwater among the three aquifers is interconnected with groundwater primarily flowing from the valley margins towards the Bitterroot River, the primary location of discharge (MBMG 2023). According to the Montana Bureau of Mines and Geology (MBMG) Ground Water Information Center database[18] over 22,000 well-completion reports from drillers have been submitted in Ravalli County. Of those wells over 19,000 were reported for domestic use, nearly 1,700 for irrigation, just over 1,000 for stockwater, and nearly 300 for public water supply. Groundwater-level changes are related to seasonal streamflow and climate variability, recharge from irrigation practices, long-term (yearly to decadal) climate variations, and groundwater pumping (usage). Two common patterns of water-level change that occur in the area include a runoff/stream recharge response where water levels rise and fall in concert with streamflow and snowmelt runoff and an irrigation response, where groundwater levels abruptly rise in late spring or early summer, stay elevated throughout the summer when irrigation is occurring, and then decline through the winter and into early spring (MBMG 2013).

Montana has authority to control or close river basins and groundwater aquifers to certain types of water appropriations due to water availability problems, water contamination problems, or concern for protecting existing water rights. Four different types of closures are in effect within Ravalli County as illustrated in Map 5 of Appendix B. These are:

- Controlled Groundwater Areas (CGWAs)

[18] https://mbmggwic.mtech.edu/reports/CountyStatisticsRAVALLI

  - Bitterroot Valley Sanitary Landfill CGWA
  - Larson Creek CGWA
- Administratively Closed Basins
  - Sharrott Creek
  - Willow Creek
- Legislatively Closed Basin
  - Entire Bitterroot River Basin
- Stream Depletion Zone
  - Rye Creek

In a CGWA, anyone wishing to drill a well must first apply for and receive a Permit for Beneficial Water Use. This requirement applies to any size and type of appropriation, including wells to be used at less than 35 gallons per minute (gpm) and less than 10 acre-feet per year, commonly referred to as "exempt" wells. Applicants for groundwater appropriations within closed basins must prove that groundwater withdrawal would not result in a net depletion of surface water. New exempt groundwater wells within the Rye Creek Stream Depletion Zone are limited to a volume withdrawal of 2 acre-feet per year and a flow of 20 gpm, rather than the 10 acre-feet a year and flow of 35 gpm for exempt wells outside the zone (MT DNRC 2023).

Resource Management Objective

1. Ensure sustainable groundwater withdrawal for Ravalli County residents into the future.

Strategies

1. Support the use of natural storage and nature-based solutions, such as beavers and beaver dam analog structures, on federal and state lands to keep more water in Ravalli County longer, increase the rate of aquifer recharge, and enhance the groundwater resource.
2. Monitor water rights (surface water and groundwater) associated with state and federal lands in the adjudication process, and ensure water rights associated with state and federal lands are appropriate for their uses.
3. Encourage the use of trained citizen volunteers with properly calibrated equipment for monitoring of groundwater and surface water quality and quantity.
4. When and where appropriate, work with developers to install or allow well loggers to monitor long-term groundwater impacts.

Water Rights

Resource Assessment

Montana water law is based on the doctrine of prior appropriation, as are most western states. Users with older rights are entitled to water during periods of limited supply over those with more recent rights. The Montana Water Use Act (Title 85, Chapter 2, MCA) and other legislation create three major processes related to water rights in the state. These processes are

adjudication, permitting/change, and enforcement, each of which are primarily carried out by a different entity. The Montana Water Court is responsible for the adjudication of all pre-1973 water claims. The MT DNRC assists the Water Court in a technical capacity, examines and processes pre-1973 claims, permits new uses of water, and processes changes to existing water rights. Finally, the twenty-first district court enforces water rights in Ravalli County.

The adjudication process is used to examine and integrate pre-1973 water right claims into a single system, as many of these older claims are ambiguous. The adjudication process, which culminates in a decree by the water court, establishes an official quantity, point of diversion, and priority date for each claim. Important to Ravalli County, federal and state lands typically have water rights claims, and these claims are adjudicated by the state as part of this system. For purposes of water right adjudication, most of Ravalli County lies within basins 76 HF, 76 HA, and 76 HE. Final decrees have not yet been issued for any of these basins. As of February 2024, the Water Court had issued a preliminary decree for the northern half of the county (76 HF and 76 HA) and a temporary preliminary decree for the southern half of the county (76 HE) (MT DNRC 2024a).

While both surface water and groundwater rights use the same prior appropriation system, groundwater uses are managed differently in some ways. For example, uses of groundwater of less than 35 gpm, or 10 acre-feet per year, are typically exempt from the permitting requirement. Cumulatively, these "exempt" wells account for a substantial amount of groundwater withdrawal across Ravalli County. Concerns about the capacity of the Bitterroot Valley aquifer to accommodate existing use and anticipated growth are increasing, and restrictions on these exemptions are being considered. Refer to the Groundwater section above for additional information.

Municipal water systems in Darby, Hamilton, Pinesdale, and Stevensville serve about 25% of Ravalli County residents. Municipal water is sourced almost entirely from groundwater wells. Water rights associated with these municipalities (typically a separate right for each well or surface water point of diversion) are generally exempt from legislative basin closure restrictions (MCA 85-2-344).

The legislative basin closure and instream flow rights for fisheries and recreation on the Bitterroot River limit new appropriations. The legislative closure of the Bitterroot River Basin is set to expire two years after a final decree is issued by the Water Court. However, with growing demand, a limited water supply, and ongoing studies, future limitations on new appropriations are likely.

Resource Management Objectives

1. Protect the water rights of Ravalli County residents and industries.
2. Enhance the quantity of water available for beneficial uses to meet the demands of existing water rights holders within the county while protecting instream flows for fish and other aquatic species.

Strategies

1. Support the development of additional water storage facilities on federal and state lands in the county that protect existing water rights and better meet existing demand within the county.
2. Ensure federal and state land management decisions adequately consider and protect water supply and water rights, including impacts to water quality that may affect certain beneficial uses.
3. Support the use of natural storage or nature-based solutions, such as beavers and beaver dam analog structures, on federal and state lands to keep more water in Ravalli County longer, increase the rate of aquifer recharge, and enhance the sustainability of groundwater withdrawals and associated water rights within the county.
4. Coordinate with the USFS to optimize the relationships among timber harvest, fuels treatments, forest cover, and snowpack to hold more snow on the landscape longer into the spring and early summer; increasing the amount of water available to water rights holders later in the year.
5. Support legislation that clarifies exempt well laws and protects existing groundwater rights as the number of exempt wells increases.

Water Quality

Resource Assessment

The use and enjoyment of a variety of natural resources is linked to water quality. As such, it is often a useful tool in assessing overall ecosystem health in the surrounding area. Among other provisions, the Clean Water Act and the Montana Water Quality Act establish a system for setting water quality standards. Water quality standards are based on the designated uses of a given body of water and can be qualitative or quantitative. Designated uses may include drinking water, recreation, propagation of aquatic life, agricultural water supply, and industrial water supply. At a minimum, U.S. Environmental Protection Agency (EPA) regulations presume that all water bodies should strive to support fishing and swimming. Drinking water for Ravalli County residents comes from both surface water and groundwater, which are connected, emphasizing the importance of maintaining water quality.

Under the Clean Water Act, states are required to monitor water quality and report to the EPA biannually. Waters that do not meet water quality standards are placed on the state's list of impaired waters. The state identifies which pollutant is causing impairment and assigns a priority for developing a Total Maximum Daily Load (TMDL). A TMDL is the maximum amount of a given pollutant allowed to enter a waterbody, given that the waterbody still meets that pollutant's water quality standards. By developing a TMDL, pollution reduction targets are determined.

The EPA requires that surface waters be placed into one of five categories in order to standardize water quality ratings. This document simplifies this system into a three-category

system as shown in Table 16 and Map 5. Any waterbody for which sufficient credible data show it is failing to achieve compliance with one or more applicable water quality standards is considered "impaired." If a waterbody is deemed impaired, it means one or more of its beneficial uses are limited or harmed to some extent.

Table 16 Montana DEQ Water Quality Reporting Categories

Category	Description
1	Unimpaired waters: All designated uses are supported, and no use is threatened.
2	Impaired waters: Available data and/or information indicate that one or more designated uses is not supported.
3	Insufficient Data: There is insufficient available data/information to make a use support determination.

Ravalli County currently contains 33 impaired waterbodies (DEQ 2020). TMDLs for the county were developed in 2014, 2011, and 2005. All of these waterbodies are not fully supporting aquatic life, and nine of them are also not supporting primary contact recreation. The primary non-pollutant causes for impaired waters are alteration in streamside vegetation and flow regime modification. The primary pollutant causes for impaired waters are sedimentation/ siltation, nitrogen, and phosphorus. The sources for all of these tend to derive from a combination of agricultural, grazing, and silviculture, particularly when these activities result in impacts to riparian habitats.

The Montana DEQ ensures compliance with the Clean Water Act. Detailed, up-to-date water quality information is available in their biannual Integrated 305(b) and 303(d) Reports.[19] Map 5 in Appendix B depicts Ravalli County's assessed waterbodies.

Resource Management Objectives

1. Manage watersheds to maintain and enhance water quality, including sufficient instream flows to support coldwater fisheries.
2. Ensure water temperatures are considered a water quality issue to help protect coldwater fisheries.
3. Ensure that impacts to water quality due to forest management projects are considered relative to the same types of impacts due to catastrophic wildfires.

Strategies

1. Coordinate with the DEQ and EPA to ensure the designated uses of various water bodies within Ravalli County are appropriate.
2. Coordinate with the DEQ and EPA to maintain or attain compliance with Clean Water Act water quality requirements.
3. Encourage the use of citizen science, with properly calibrated equipment and trained volunteers, in the monitoring of stream quality and stream temperatures.

[19] https://deq.mt.gov/water/resources

Wetlands and Riparian Areas

Resource Assessment

Wetlands and riparian ecosystems are critical to maintaining water quality. Specifically, they help to maintain stream flows, provide shading to stream channels, and act as a buffer which reduces erosion and sediment inputs into the channel. The National Wetland Inventory (NWI) indicates that Ravalli County contains nearly 37,000 acres of wetlands. Of these, approximately 16,237 acres are classified as palustrine (lacking flowing water), 3,276 are lacustrine (lake associated), and 17,409 are riverine (river associated). Approximately 57% of these wetland areas are located on federally managed lands (USFS and USFWS), 3% are on state lands, and 37% are on private lands. The remaining 3% are open water areas. NWI also indicates that the county contains just over 22,000 acres of riparian area. Of these riparian areas, approximately 35% are located on federally managed lands (USFS and USFWS), 1% are on state lands, and 63% are on private lands. The remaining 1% are open water areas. Map 6 in Appendix B depicts Ravalli County's wetlands and riparian areas.

As described above, Ravalli County currently contains 33 impaired waterbodies. Many of these are impaired because alteration in streamside vegetation is leading to at least one designated use not being adequately supported.

Resource Management Objective

1. Protect the quantity and quality of wetlands and riparian areas throughout the county to safeguard water quality and wildlife habitat.

Strategies

1. Review proposed actions on federal and state lands to ensure that wetlands and riparian areas will not be impacted, and that any impacts are properly mitigated.
2. Support projects designed to restore wetlands and riparian areas and improve water quality.
3. Support the use of beavers and beaver dam analog structures on state and federal lands as a natural way to increase and improve wetlands and riparian areas.
4. Support the use of grazing on state and federal lands when such use does not result in the degradation of wetlands, riparian areas, and water quality. When grazing is found to result in these consequences, assist lease holders in the mitigation of such impacts.[20]

Wild and Scenic Rivers

Resource Assessment

Under the Wild and Scenic Rivers Act of 1968 (Public Law 90-542; 16 USC Chapter 28) river segments possessing "outstandingly remarkable scenic, recreational, geologic, fish and wildlife,

[20] Ravalli County supported the removal of cattle from the Trapper Peak grazing allotment on the BNF when cattle were found to be negatively impacting wetlands, riparian areas, and water quality in the headwaters of the West Fork Bitterroot River.

historic, cultural, or other similar values" are to be preserved in a "free-flowing condition...for the benefit and enjoyment of present and future generations" (16 USC § 1271). Rivers designated under the Act receive one of three levels of protection (wild, scenic, or recreational) which limit development to varying degrees. Designation of a river as part of the National Wild and Scenic River System does not prohibit all development or give the federal government control over private property, but it does prohibit actions that might impede the free-flowing condition of the river. The USFWS[21] offers several resources, including a map of the entire National Wild and Scenic Rivers System. Ravalli County does not currently contain any waterways designated under the National Wild and Scenic River System.

Resource Management Objective

1. Any newly designated wild and scenic river segments in Ravalli County will be widely supported by county residents.

Strategies

1. Encourage public involvement by county residents if river segments are proposed for inclusion in the wild and scenic river system by Congress or recommended for inclusion during federal land management planning processes.
2. If river segments are proposed within the county, help educate the public about the protections and restrictions associated with the different designation classes (wild, scenic, and recreational).
3. Support only those proposed segments with strong public and commissioner support.

[21] https://www.rivers.gov/index.php

Chapter 8: Agriculture

Farming

Resource Assessment

Agriculture is an integral part of the history and culture of Ravalli County and contributes significantly to the county's economic stability. In 2017, Ravalli County farms and ranches generated $33,100,000, or 3% of the county's total gross domestic product (MSU Extension 2024). The county has seen a 200% increase in population since 1970, along with an increase in non-farm employment, urban and subdivision development, and an increased scarcity and cost of farmland (Ravalli County Economic Development Authority 2024). Farm earnings have declined nearly 90% since 1970, despite a significant increase in the number of farm jobs (Ravalli County Economic Development Authority 2024). The market value of agricultural products sold in 2022 was over $40,880,000 with 44% of that from crops and 56% from livestock, poultry, and their associated products (USDA NASS 2022). There are 2,582 producers and eight local farmers markets that occur throughout the year in the county (Ravalli County Economic Development Authority 2024). Additionally, Ravalli County is home to the Western Agriculture Research Center which operates in conjunction with MSU Extension and is the only center focused primarily on horticulture research.

Ravalli County is 1.9% cropland and ranks 53rd in the state in terms of percentage of cropland. There are 1,400 farms in Ravalli County, with an average farm size of 143 acres (USDA NASS 2022). For 2023 the National Agricultural Statistics Service reports a total of 29,203 acres of cropland, consisting primarily of small acreage and commodity crops. All but 352 acres of cropland are on private land; these public cropland acres are on MT DNRC Land (Jacques 2025). The majority of cropland in Ravalli County is hayland (Hamilton Field Office NRCS 2024) and other crops include wheat, barley, corn, a variety of vegetables, berries, hops, Christmas trees, cut flowers, and others. Fruit orchards (mostly apples) are also an important commodity in the county (Table 17)(USDA NASS 2023). In addition to crops, there are 180,065 acres of grassland and pasture on private, USFS, and Montana State Trust lands (USDA NASS 2023).

Table 17 2023 Primary Crop Acreages in Ravalli County

Crop	Acres	Percentage
Alfalfa	13,237.4	45%
Other Hay/Non Alfalfa	9,038.8	31%
Barren	4,031.4	14%
Wheat (Spring, Winter, and Durum)	941.6	3%
Barley	872.7	3%
Fallow/Idle Cropland	215.7	<1%
Sweet Corn	210.4	<1%
Triticale	201.0	<1%
Sod/Grass Seed	105.2	<1%
Peas	92.7	<1%

Oats	88.3	<1%
Corn	59.4	<1%
Lentils	55.2	<1%
Flaxseed	14.7	<1%
Other Crops (<10 acres)	40.3	<1%
Grand Total	**29,203**	**100%**

Resource Management Objective

1. Ensure water supplies are adequate to support farming practices throughout Ravalli County under present and future climactic conditions.

Strategies

Refer to the strategies listed in *Chapter 7: Water Resources* for (1) Irrigation and Related Infrastructure, (2) Dams and Reservoirs, and (3) Water Rights.

Livestock and Grazing

Resource Assessment

Livestock is a significant agricultural component in Ravalli County and the community is very proud of their ranching heritage. Sales of livestock, poultry, and their associated products totaled $23,087,000 in 2022 (USDA NASS 2022). The 2022 Census of Agriculture documented over 19,000 cattle and calves, along with thousands of chickens, horses and ponies, sheep, goats, turkeys, and hogs (Table 18).

Table 18 2022 Census of Agriculture Livestock Inventory for Ravalli County

Livestock	Inventory
Cattle and calves	19,015
Chickens	8,509
Horses and ponies	3,333
Sheep and lambs	1,740
Goats	1,052
Turkeys	501
Hogs and pigs	169

Most of the livestock grazing allotments in the county are on USFS-managed land and private grassland/pasture, however there is also a small amount of Montana State Trust land that is permitted for grazing (Table 19) (Map 7 Appendix B).

Table 19 Ravalli County Allotment Acres by Land Ownership

Land Ownership	Allotment Acres
Federal – USFS	228,577 (97,025 Active)
State – MT DNRC	22,076
Private Grassland/Pasture	93,317

Rangelands are primarily used as summer pasture or left unused for wildlife. The conditions of rangelands vary. Some large areas have been degraded as a result of historical overgrazing. In these degraded areas, desirable bunchgrasses have been replaced with less desirable grasses, shrubs, and weeds. In some areas, exotic forage species such as timothy, smooth brome, crested wheatgrass, and many others were planted for hay and pasture and have displaced native rangeland vegetation (Hamilton Field Office NRCS 2024).

Resource Management Objective

1. Ensure the continuation of public land grazing in Ravalli County in a way that honors the county's ranching culture while protecting rangelands from the impacts of overgrazing.

Strategies

1. Encourage mechanisms to allow subleasing and transfer of grazing rights or allotments on public lands to preserve and enhance the local grazing industry.
2. Coordinate with the USFS and MT DNRC in the formulation and modification of allotment management plans.
3. Support rangeland monitoring efforts and assist grazing allotment permittees with efforts to mitigate grazing impacts.
4. Increase active grazing acreage where ecologically appropriate.

Noxious Weeds and Invasive Species

Resource Assessment

Plants designated as noxious by the State of Montana are listed and ranked by priority status in the 2019 Montana State Noxious Weed List (Montana Department of Agriculture 2019). Noxious weeds are defined as any exotic plant species established or that may be introduced in the state that may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses or that may harm native plant communities. In addition to state listed noxious weeds, county noxious weed lists are also generated (Montana Department of Agriculture 2024). The Ravalli County Weed Board has designated six noxious weed species in addition to the state list and has identified seven priority weed species in the county (Table 20). If priority weeds are found, the Ravalli County Weed District should be notified.

Table 20 Ravalli County Noxious and Priority Weeds

Species Common Name (*Latin name*)	**Ravalli County Noxious Weed**	**Ravalli County Priority Weed**
common bugloss (*Anchusa officinalis*)	x	
field scabious (*Knautia arvensis*)	x	
black henbane (*Hyoscyamus niger*)	x	
common teasel (*Dipsacus fullonum*)	x	
kochia (*Kochia scoparia*)	x	
baby's breath (*Gypsophila paniculata*)	x	
blueweed (*Echium vulgare*)		x

orange hawkweed (*Hieracium aurantiacum*		x
salt cedar (*Tamarisk ramosissima*)		x
Japanese knotweed (*Polygonum cuspidatum*, and complex)		x
purple loosestrife (*Lythrum salicaria*)		x
rush skeleton weed (*Chondrilla juncea*)		x
yellow flag iris (*Iris pseudacorus*)		x

The Montana County Weed Act prohibits the propagation and spread of noxious species. Landowners must adhere to the noxious weed management program of the local weed management district. The act also deems that noxious weed infestations must be disclosed with the sale of any land. The Ravalli County Weed Board duties and responsibilities are detailed in Section 7-22-2109 of the Montana County Weed Act. These include administering the district's noxious weed management program; establishing management criteria for noxious weeds on all land within the district; and making all reasonable efforts to develop and implement a noxious weed management program covering all land within the district owned or administered by a federal agency. When possible, management must include cultural, chemical, and biological methods and shall take precautions while managing the noxious weeds to preserve beneficial vegetation and wildlife habitat.

Resource Management Objective

1. Minimize the prevalence and spread of Ravalli County noxious and priority weeds, as well as state-listed noxious weeds, within funding and resource constraints.

Strategies

1. Support the control of noxious weeds on state and federal lands, easements, and ROW.
2. Cooperate with federal and state agencies to coordinate weed monitoring and management efforts across jurisdictions, including county- and privately managed lands, in coordination with the Ravalli County Weed Board as necessary.

Chapter 9: Other Physical Resources

Air Quality and Climate

Resource Assessment

Air quality is important to the health, safety, and welfare of Ravalli County residents. Under the Clean Air Act of 1970 (42 USC §7410 et seq.), the EPA is responsible for setting and enforcing air quality standards. Local enforcement of many air pollutants is delegated to the Montana DEQ. 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. The status of areas with respect to federal ambient air quality standards are classified as nonattainment (violating the air quality standard), attainment (better than federal standards), or unclassified (due to an absence of monitoring data). Ravalli County is currently considered in attainment or unclassified for all federal ambient air quality standards.

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,
- Agricultural practices,
- Fuel burning equipment,
- Oil and gas operations, and
- Manufacturing operations.

Seasonally, air quality in Ravalli County can be significantly degraded by wildfire smoke due to the presence of high concentrations of particulate matter. The negative health impacts associated with wildfire smoke are well documented. Particulate levels are influenced by several variables including fire location and size, wind speed and direction, fuel type, and fire intensity. As a result, air quality fluctuates regularly throughout the fire season. While some recent years have seen lower smoke levels than others, the overall trend is toward worsening air quality from catastrophic wildfires.

Wildfire smoke tends to settle in the Bitterroot Valley due to frequent temperature inversions. This smoke tends to come primarily from large wildfires in California, Oregon, Washington, Idaho, and Canada based on the prevailing winds, but local fires can and do contribute to the smoke that settles in the valley. With this in mind, Ravalli County's authority to improve the local air quality resulting from wildfire smoke is limited, but not insignificant.

Ravalli County's climate varies with elevation, which ranges from about 3,200 feet in the valley bottom to over 10,000 feet along the Bitterroot crest. Average annual precipitation ranges from 15 to 60 inches and average annual temperature ranges from 22 to 52 degrees Fahrenheit in

most of this area. Summers are typically dry, except for brief but intense convective thunderstorms that occur most afternoons in the mountains. Most of the precipitation during fall, winter, and spring is snow. The freeze-free period averages 108 days and ranges from 35 to 180 days. It is longest in the lower valleys and shortest in the mountains. Freezing temperatures occur every month of the year in the mountains, and some peaks have a continuous cover of snow and ice (NRCS 2022).

Climate change is defined as the change in climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere, in addition to natural climate variability observed over comparable time periods (IPCC 2018). Paleoclimatology, the study of climates at particular times in the geologic past, uses ice cores, tree rings, and sediment cores as proxy records for understanding our current climate in relation to past conditions. These studies have shown that earth's climate is in a perpetual state of change, but that environmental factors, such as continental drift, solar energy, greenhouse gasses (GHGs) in the atmosphere, and even variations in the earth's orbit can influence or impact these natural climate variations (National Geographic 2023).

The potential causes and effects of climate change are varied. For example, if global climate change results in a warmer and drier climate, this could result in increased concentrations of particulate matter due to increased windblown dust from drier and less stable soils. Warmer, drier conditions also create additional challenges for agriculture. Reduced snowpack and earlier snowmelt could result in a longer wildland fire season, which could lead to higher concentrations of ozone and particulate matter. Energy development, industrial activities, and the use of combustion engines generate carbon dioxide (CO_2) and methane (CH_4), both of which are GHGs. Wildland fires are also a source of CO_2 and other GHGs, and livestock grazing is a source of CH_4. Other activities with the potential to contribute to climate change include soil erosion from disturbed areas and fugitive dust from roads, which have the potential to darken snow-covered surfaces and expedite snowmelt. Rapid snowmelt in the spring results in less water availability in the summer, when it is needed most.

The USDA aims to implement climate-smart agricultural and forestry practices. The agency has developed a 2024–2027 Climate Adaptation Plan (USDA 2024a) that provides an overview of their approach to climate adaptation and resilience; describes the risks climate change poses to agency-managed operations, services, and lands; and lays out planned actions to address these risks. The plan also addresses how available data, much of which is available through regional Climate Hubs, can be used to assess climate risks. The Northern Plains Climate Hub[22] serves Montana and delivers science-based knowledge, practical information, management and conservation strategies, and decision tools to farmers, ranchers, and forest landowners with the goal of helping them adapt to weather variability and changing climatic conditions. The

[22] https://www.climatehubs.usda.gov/hubs/northern-plains

USDA has developed a complete list of climate-smart agricultural and forestry activities for fiscal year 2025.[23] A few examples of these activities include:

- Prescribed burning
- Critical area planting
- Forest stand improvement

Climate science is a continually growing and emerging field. Additional and recent information and regional projections of climate change for the area can be found through the following links:

- U.S. Global Change Research Program: http://www.globalchange.gov/
- Intergovernmental Panel on Climate Change (IPCC): http://www.ipcc.ch/

In summary, land management in Ravalli County impacts the climate, and a changing climate impacts Ravalli County and its residents. The USFS recognizes this and is attempting to alter their land management practices to lessen or reverse the climate impacts associated with forest management. Regardless of future actions, the West is expected to experience increased wildfires, longer fire seasons, and reduced air quality during the fire season for many years (Whitlock et al. 2017). The degree and duration of these impacts will be influenced by local natural resources and land management decisions across the globe.

Resource Management Objectives

1. Protect the air quality in Ravalli County to support the health and welfare of county residents, especially from the impacts of wildfire smoke.
2. Protect county residents from the negative impacts associated with a changing climate.

Strategies

1. Prioritize air quality in both forest management plans and wildfire management.
2. Review state and federal proposed actions to ensure they adequately analyze and disclose impacts to air quality, including those that would result from an increased risk of large-scale, high-intensity, catastrophic wildfire.
3. Support federal and state actions designed to reduce the likelihood, scale, and intensity of wildfire.
4. Coordinate local resources with state and federal agencies to assist with wildfire mitigation projects.
5. Ensure planned state and federal actions adequately mitigate anticipated impacts to air quality.
6. Coordinate with federal and state agencies, Fire in the Root, and other Ravalli County committees and collaborations to help mitigate the impacts of summer wildfire smoke on the residents of Ravalli County.

[23] https://www.nrcs.usda.gov/sites/default/files/2023-10/NRCS-CSAF-Mitigation-Activities-List.pdf

7. Support dust suppression measures on USFS roads. Ensure that commercial activities using the USFS road system include dust mitigation measures.
8. Support a requirement by the USFS for large commercial operations to include air quality monitoring to minimize air pollution and ensure that air quality standards are not exceeded.
9. Support the use of quantitative air quality standards and limitations for commercial operators conducting work on state and federal lands.

Energy, Mining, and Mineral Resources

Resource Assessment

Mining and Mineral Resources

Montana Bureau of Mines and Geology (MBMG) records indicate that many mineral resources occur within Ravalli County (MBMG 1957, 1960). Mining and prospecting in the area began in the late 1800s and continued into the early to mid-1900s. The Overwhich-Hughes Creek Mining District in the upper West Fork of the Bitterroot was a bustling gold district during this time. Gold was also mined in the hills east of Stevensville during this time, and the Curlew mine near Victor produced silver, lead, zinc, and gold ore well into the 20th century (USFS 2025b).

Sand, gravel, and rock are the primary resources mined in Ravalli County today with multiple active operations located on private lands along the Bitterroot River valley bottom. Recreational gold mining still occurs but is primarily conducted by gold panning in limited fashion. A recent Notice of Intent was issued to explore minerals in the historic Sheep Creek Columbite Deposit Mine Site located in the southwestern corner of Ravalli County (USFS 2024).

Renewable Energy Resources

Ravalli County contains no utility scale (1 megawatt [MW] or larger) geothermal, hydroelectric, solar, or wind generating facilities (DEQ 2022a). The County does generate wind and solar energy through small-scale (less than 1 MW) residential and business installations such as Ravalli Electric Co-op's 50-kilowatt (kW) solar array constructed in 2016 and the recently funded 25 kW photovoltaic (PV) system at Graze and Roam LLC, a small cattle ranch near Victor, MT (USDA 2024b).

The U.S. Department of Energy (DOE) National Renewable Energy Laboratory recently published a study finding that there is significant potential for further expanding renewable energy production on federal lands of the contiguous U.S. The study reports that there are 17 million acres of USFS administered lands available for development across the contiguous U.S. These lands are technically capable of producing 298 gigawatts (GW) of wind energy and 1,256 GW of utility PV energy (Trieu Mai et al. 2025). The EPA's EnviroAtlas[24] indicates that the average annual daily potential for wind energy production in Ravalli County ranges from 1 to 4 kW-hours per square meter per day ($kWh/m^2/d$) which is considered poor to good potential

[24] https://enviroatlas.epa.gov/enviroatlas/interactivemap//

(DOE 2002). The average annual daily potential for solar energy production in the county is 4.66 $kWh/m^2/d$ which is considered moderate potential (DEQ 2022b). In addition to energy production potential, many other factors and variables need to be weighed when considering utility scale renewable energy development. Assessing a potential site involves considering the location's technical, economic, political, and other variables.

Resource Management Objectives

1. Ensure that Ravalli County's water, air, and visual resources are considered and protected along with other impacts to county residents when planning energy, mining, and mineral resources projects on state and federal lands.
2. Ensure impacts to Ravalli County owned and/or maintained infrastructure resulting from energy, mining, and mineral resource projects are mitigated.

Strategies

1. Encourage and support energy and mineral resource research, exploration, and development on federal and state lands when the short-term economic benefits clearly outweigh any long-term impacts to the county's other natural resources.
2. Ensure negative environmental impacts associated with energy and mineral resource developments are mitigated to the greatest extent possible, and that the monitoring of environmental impacts is a required component of any development.
3. Support bonding requirements for energy, mining, and mineral resources companies operating in Ravalli County. Bonding levels should be sufficient to remediate all foreseeable environmental impacts should the company file for bankruptcy.
4. Insist that the mining company and USFS coordinate and consult with Ravalli County during the planning stages if the Sheep Creek Mine proceeds toward development.
5. Coordinate with developers and the USFS to ensure impacts to Ravalli County natural resources and infrastructure due to the Sheep Creek Mine are mitigated to the greatest extent possible.

Soils

Resource Assessment

Soil conservation is crucial to sustaining a viable agricultural economy, wildlife populations, and high-quality water and air resources. Practices that remove or compact topsoil degrade the land's ability to support ecosystem services (e.g., ecological diversity, wildlife habitat, agricultural production, and timber production). Great differences in soil properties can occur within short distances. Soils in Ravalli County are diverse and highly variable, reflecting differences in parent material, position on the landscape, elevation, aspect, and climatic variables such as precipitation and temperature. The plant communities supported by such a diversity of soils are equally diverse, ranging from sagebrush-bunchgrass communities to forests and alpine meadows. The NRCS has conducted research and surveys to create detailed

soil maps for Ravalli County, which are available online through the Web Soil Survey (WSS).[25] Soil surveys offer base information on soil properties, which can be used when evaluating proposed land use development or disturbance activities. The WSS identifies soil properties and provides suitability and limitation ratings for various land use and treatment activities.

Wildfires can impact soils in a variety of ways. Low-intensity fires tend to have little impact on soils and positive impacts on the ecosystem and overall forest health. High-intensity wildfires can damage the organic soil layer in such a way that it takes many years or decades to reestablish vegetation. This can lead to type conversion as forested hillsides are permanently turned into grass and/or shrublands. This phenomenon is evident in the Bitterroot Mountains in several areas visible from the valley. These types of fires also tend to result in increased soil erosion and flooding.

Resource Management Objective

1. Protect and maintain healthy soils across state and federal lands within Ravalli County.

Strategies

1. Support forest treatment efforts aimed at reducing the likelihood of large, high-intensity wildfires.
2. Review proposed state and federal actions to ensure that soil health is considered and protected, with impacts to soil mitigated as much as possible.
3. Support continued scientific investigations into understanding the impacts of wildfire on soils and how negatively impacted areas might be treated to encourage and expedite the recovery of forested ecosystems.

[25] http://websoilsurvey.sc.egov.usda.gov/

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List of Appendices

APPENDIX A – SURVEY QUESTIONS AND RESPONSE SUMMARY

APPENDIX B – MAPS