CACHE COUNTY COUNCIL

November 7, 2023 at 5:00 p.m. - Cache County Chamber at 199 North Main, Logan, Utah.

In accordance with the requirements of Utah Code Annotated Section 52-4-203, the County Clerk records in the minutes the names of all persons who appear and speak at a County Council meeting and the substance "in brief" of their comments. Such statements may include opinions or purported facts. The County does not verify the accuracy or truth of any statement but includes it as part of the record pursuant to State law.

MEMBERS PRESENT: Chair David Erickson, Vice-Chair Barbara Tidwell, Councilmember Karl Ward, Councilmember Sandi Goodlander, Councilmember Nolan Gunnell, Councilmember Mark Hurd, Councilmember Kathryn Beus.
MEMEBERS EXCUSED:
STAFF PRESENT: David Benson, Mike McGinnis, Rod Hammer, Bartt Nelson, Chad Jensen, Danny Major, Nathan Argyle, Brittany Kingston, Terryl Warner.
OTHER ATTENDENCE: JoAnn Bennett

Council Meeting

1. **Call to Order 5:00p.m. –** Council Chair David Erickson 0:00

2. **Opening Remarks and Pledge of Allegiance** – Councilmember Nolan Gunnell 0:21

3. **Review and Approval of Agenda APPROVED** 2:22
   Action: Motion made by Councilmember Barbara Tidwell to approve the amended removal of items 10d and 10e from the agenda; seconded by Councilmember Karl Ward. 2:54
   Motion passes.
   Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
   Nay: 0

4. **Review and Approval of Minutes APPROVED** 3:05
   Action: Motion made by Councilmember Karl Ward to approve the minutes; seconded by Councilmember Nolan Gunnell and Councilmember Barbara Tidwell. 3:11
   Motion passes.
   Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
   Nay: 0

5. **Report of the County Executive** 3:25
   David Zook spoke to the council. David Zook met with President Adams of the state senate about infrastructure. 3:31; Attended the mayors association meeting. 4:18; Received letter from family about the 3200 south project and their thanks about the project. 4:55; Gave thanks to everyone who helped at the cache summit. 5:47; Express gratitude to all department heads. 6:22; Attended the inaugural mental health summit of pause wellness.6:50;

6. **Items of Special Interest**

   A. Intermountain Healthcare, Total gift to the Community Presentation – Brandon McBride and Emilio Rodriguez 7:55
   Brandon McBride and Emilio Rodriguez spoke to the council. 8:01; Provide an update on the tax exempt status and overview of Logan regional hospital. 8:35

   B. Salary Increases for the Cache County Attorney's office – Dane Murray, Interim County Attorney. 19:26
   Dane Murray spoke to the council about salary increases. 19:35
   Action: Motion made by Councilmember Barbara Tidwell to approve the marketed adjustment rates presented to council by Cache county Attorney's office; seconded by Councilmember Karl Ward. 23:50

Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

7. **Department or Committee Reports**

8. **Public Hearings** 22:21

A. **Set Public Hearing for November 28, 2023 – *Ordinance 2023-39* – Making a Cost of Living Adjustment to the Salaries of the Cache County Elected Officers and Members of the Cache County Council** 22:27

Discussion:
Action: Motion made by Councilmember Barbara Tidwell to approve public hearing for November 28, 2023; seconded by Councilmember Nolan Gunnell. 22:39
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

B. **Set Public Hearing for November 28, 2023 – *Ordinance 2023-40* – An Ordinance Entering into a Franchise Agreement with All West/Utah, Inc. to Install, Operate, and Maintain a Communication System with the County's Public Right of Ways**

Discussion:
Action: Motion made by Councilmember Barbara Tidwell to approve public hearing for November 28, 2023; seconded by Councilmember Nolan Gunnell. 22:39
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

C. **Set Public Hearing for November 28, 2023 at 6:00 p.m. – *Resolution 2023-18* – Adopting the 2024 Cache County Budget**

Discussion:
Action: Motion made by Councilmember Barbara Tidwell to approve public hearing for November 28, 2023; seconded by Councilmember Nolan Gunnell. 22:39
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

D. **Public Hearing – *Ordinance 2023-38* – amending the 2017 Cache County Resource Management Plan (RMP), a part of Cache County's General Plan, Which is Applicable to Public Lands within the County** 24:59
Stephan Nelson and Conner Smith spoke to the council. 25:40; Councilmember Karl Ward asked a question about the information. 34:44; Conner Smith answered Councilmember Karl Wards question. 34:56; Stephan Nelson spoke to the council about the stake holder meeting. 35:15; Councilmember Nolan Gunnell Asked a question about pipelines and the oil companies. 35:45; Conner Smith answered Councilmember Nolan Gunnells question. 36:04; Councilmember Sandi Goodlander spoke to the council. 37:06; Councilmember David Erickson spoke to the council. 37:20; Stephan Nelson Spoke to the council. 37:45; Councilmember Nolan Gunnell asked a question about the stake holders. 38:15; Conner Smith answered Councilmember Nolan Gunnells question. 38:22;
Discussion:
Action: Motion made by Councilmember Sandi Goodlander to approve public hearing; seconded by Councilmember Karl Ward. 39:27
Motion passes.

Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

E. **Public Hearing – *Resolution 2023-20* Opening the 2023 Budget** 39:50
Brittany Kingston spoke to the council. 40:41; Micah Safsten spoke to the council. 42:39; Councilmember David Erickson asked a question. 45:39; Brittany Kingston answered councilmember David Erickson's question. 45:45; Councilmember Karl Ward Answered Councilmember David Erickson's question. 46:03;
Discussion:
Action: Motion made by Councilmember Karl Ward to approve public hearing; seconded by Councilmember Barbara Tidwell. 48:50
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

9. **Pending Action**

A. ***Ordinance 2023-28*** **Graham Additional Rezone**
A request to rezone – 125 acres located at 11432 North 2300 East, near Richmond, from the Forest Recreation (FR40) Zone to the Agricultural (A10) Zone. Planning Commission recommended denial. (**Tabled until December 5, 2023 Meeting**)

Discussion:
Action: Motion made by Councilmember * to approve Ordinance/Resolution; seconded by Councilmember *.
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

B. ***Resolution 2023-18*** **Adopting the 2024 Cache County Budget** 49:36
Micah Safsten spoke to the council about the tentative budget. 49:54; Brittany Kingston Spoke to the council. 52:08;
Discussion:
Action: Motion made by Councilmember Sandi Goodlander to accept the tentative budget; seconded by Councilmember Kathryn Beus. 51:20
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

Action: Motion made by Councilmember Nolan Gunnell to approve the amendments that where submitted and attached to the 2024 Budget; seconded by Councilmember Barbara Tidwell. 1:01:25
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

10. **Initial Proposals for Consideration of Action**

A. ***Ordinance 2023-38*** **Amending the 2017 Cache County Resource Management Plan (RMP, a part of Cache County's General Plan, which is Applicable to Public Lands within the County** 1:03:32

Discussion:
Action: Motion made by Councilmember Karl Ward to suspend the rules and approve Ordinance 2023-38; seconded by Councilmember Kathryn Beus. 1:03:42
Motion passes.

Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

B. ***Resolution 2023-20*** **Opening the 2023 Budget** 1:04:15
Councilmember Sandi Goodlander asked a question about the 2023 Budget. 1:05:58; Micah Safsten answered the council's questions. 1:06:00; **Postponed to next council meeting.**
Discussion:
Action: Motion made by Councilmember Kathryn Beus to approve Resolution 2023-20; seconded by Councilmember Mark Hurd. 1:04:23
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

C. ***Resolution 2023-21*** **Seasonal Access Restrictions for County Roads** 1:09:38
Matt Philips spoke to the council. 1:10:19; Councilmember Sandi Goodlander asked a question the differences from last year. 1:12:34; Matt Philip answered the council's questions and showed locations on the map. 1:12:59; Council member Nolan Gunnell Asked a question about making sure roads are made public and have open access to roads and if the closure will affect the public roads. 1:20:11; Dane Murray discussed some clarifications on public road closures. 1:21:10;
Discussion:
Action: Motion made by Councilmember Karl Ward to amend Resolution 2023-21 to remove mineral road; seconded by Councilmember Kathryn Beus. 1:29:08
Motion passes.
Aye: 6 David Erickson, Barbara Tidwell, Kathryn Beus, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0
Abstain: 1 Nolan Gunnell

Action: Motion made by Councilmember Karl Ward to suspend the rules to approve amended Resolution 2023-21; seconded by Councilmember Sandi Goodlander. 1:30:09
Motion passes.
Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
Nay: 0

D. ***Resolution 2023-22*** **Incentive Plans for Special projects or Assignments**
Removed from Agenda

E. ***Resolution 2023-23*** **Interim Acting Pay**
Removed from Agenda

11. **Other Business** 1:30:47

A. UAC Annual Convention — Nov. 15-17, 2023 in St. George
Dave, Karl, Sandi, Barbara, Mark, Nolan

B. October Building Permits

12. **Councilmember Reports** 1:32:09
David Erickson –
Sandi Goodlander –
Karl Ward –
Barbara Tidwell –
Kathryn Beus –
Nolan Gunnell –

Mark Hurd –

13. **Executive Session –** Utah Code 52-4-205(1)(d) – Strategy session to discuss the purchase, exchange, or lease of real property 1:33:46

    Action: Motion made by Councilmember Kathryn Beus to move to executive session; seconded by Councilmember Karl Ward. 1:33:49
    Motion passes.
    Aye: 7 David Erickson, Barbara Tidwell, Kathryn Beus, Nolan Gunnell, Sandi Goodlander, Karl Ward, Mark Hurd
    Nay: 0

Adjourn: 7:30 PM

APPROVAL: David Erickson, Chair
Cache County Council

ATTEST: David Benson, Clerk
Cache County Council

STATE OF UTAH
COUNTY
CLERK
CACHE COUNTY

Cache County

CACHE COUNTY
ORDINANCE No. 2023-38

AMENDING THE 2017 CACHE COUNTY RESOURCE MANAGEMENT PLAN (RMP), A PART OF THE CACHE COUNTY'S GENERAL PLAN, WHICH IS APPLICABLE TO PUBLIC LANDS WITHIN THE COUNTY

A) Whereas, the "County Land Use Development and Management Act," Utah Code Ann. §17-27a-101 et seq., as amended (the "Act"), provides that each county may enact a land use ordinance establishing regulations for land use and development; and

B) WHEREAS, the County Resource Management Plan is an Appendix to the Cache County General Plan; and

C) WHEREAS, The County Resource Management Plan is an advisory policy document to inform federal agencies of the desires of the County on policy, goals, and objectives for managing natural resources on public lands, as defined within Utah Code 63L-6-102; and

D) WHEREAS, the requirement for the adoption of a County Resource Management Plan was created following the passing of Utah Code §17-27a-4; and

E) WHEREAS, the County Resource Management Plan was adopted by Cache County Council via Resolution No. 2017-16; and

F) WHEREAS, Utah Code was amended in 2022 requiring counties to include four new resources, including critical minerals and rare earth elements, renewable energy, pipelines and infrastructure, and utility corridors;

G) WHEREAS, the Planning Commission caused notice of a public hearing for the amendment to be advertised at least ten (10) days before the date of the public

hearing on the Utah Public Notice Website and on the Cache County website as required under County Code 17.02.070; Notice for Public Meetings; and

H) WHEREAS, the Planning Commission held a public hearing on October 5, 2023, and accepted all comments, and recommended the approval of the proposed amendment to the County Council for final action on November 2, 2023; and

I) Whereas, the Act also provides certain procedures for the county legislative body to adopt or reject amendments to the land use ordinance; and

J) WHEREAS, following proper notice, the County Council held a public hearing on November 7, 2023 to consider any comments regarding the proposed amendments. The County Council accepted all comments; and

NOW, THEREFORE, the County Legislative Body of Cache County ordains as follows:

SECTION 1: The Cache County Resource Management Plan is amended to read in full, attached as Exhibit 1:

SECTION 2:
This ordinance takes effect 15 days following its passage and approval by the County Council.

PASSED AND APPROVED BY THE COUNTY COUNCIL OF CACHE COUNTY, UTAH THIS 7th DAY OF NOVEMBER 2023.

	In Favor	Against	Abstained	Absent
Sandi Goodlander	X			
David Erickson	X			
Nolan Gunnell	X			
Barbara Tidwell	X			
Karl Ward	X			
Mark Hurd	X			

Kathryn Beus	X			
Total	7	∅	∅	∅

Cache County
1857

CACHE COUNTY:

By:_____
David Erickson, Chair

ATTEST:

By:_____
David Benson, County Clerk

ACTION OF COUNTY EXECUTIVE:

X Approve
_____ Disapprove (written statement of objection attached)

By:_____ 11/8/23
David Zook, County Executive Date

Cache County
1857

EXHIBIT 1

CACHE COUNTY
Resource Management Plan

Cache County
– 1857 –

Adopted July 201

THIS PLAN AMENDED IN 202

The County Resource Management Plan
as adopted under ordinance 2023-038
adds four new resources as required b

TERMS AND ABBREVIATIONS

Areas of Critical Environmental Concern (ACECs)
Animal and Plant Health Inspection Service (APHIS)
animal unit months (AUMs)
Aquatic Invasive Species (AIS)
best management practices (BMPs)
Cooperative Weed Management Area (CWMA)
County Resource Management Plan (CRMP)
Endangered Species Act (ESA)
Federal Emergency Management Agency (FEMA)
Federal Land Policy and Management Act (FLPMA)
Natural Resources Conservation Service (NRCS)
National Ambient Air Quality Standards (NAAQS)
National Environmental Policy Act (NEPA)
National Flood Hazard Layer (NFHL)
National Flood Insurance Program (NFIP)
National Forest Management Act (NFMA)
National Pollutant Discharge Elimination System (NPDES)
Natural Resources Conservation Service (NRCS)
right-of-way (ROW)
State Wildlife Grants program (SWG)
US Army Corps of Engineers (USACE)
US Bureau of Land Management (BLM)
US Department of Defense (DOD)
US Department of Agriculture (USDA)
US Environmental Protection Agency (EPA)
US Forest Service (Forest Service)
US Geological Survey (USGS)
Utah Automated Geographic Reference Center (AGRC)
Utah Department of Environmental Quality (DEQ)
Utah Department of Natural Resources (DNR)
Utah Division of Air Quality (DAQ)
Utah Division of Oil, Gas, and Mining (DOGM)
Utah Division of Water Quality (DWQ)
Utah Division of Water Rights (DWRi)
Utah Division of Wildlife Resources (DWR)
Utah Geological Survey (UGS)
Utah Forestry, Fire, and State Lands (FFSL)
Utah Pollution Discharge and Elimination System (UPDES)
Utah Renewable Energy Zone (UREZ)
Utah School and Institutional Trust Lands (SITLA)
Visual Resource Management (VRM)

TABLE OF CONTENTS

INTRODUCTION

This County Resource Management Plan (CRMP) is a planning document used to define policy, goals, and objectives for managing natural resources on public lands (defined in Utah Code §63L-6-103) within Cache County. Traditionally, federal agencies (US Bureau of Land Management and US Forest Service) are responsible for completing resource management plans for much of the public land within Utah. But Utah State Code was amended in 2015 (and again in 2016) to require every county in Utah to complete a CRMP addressing all public lands within its jurisdiction. Utah Code §17-27a-4 defines 28 core resources that must be considered in the CRMP "to provide for the protection, conservation, development, and managed use of resources that are critical to the health, safety, and welfare of the citizens of the county and of the state."

This CRMP serves two important purposes. First, the planning process allows Cache County to assess natural resources that play important roles in the local economy and set goals and objectives for the protection and utilization of those resources. Second, the CRMP provides federal land managers local land use plans that they can consider in their planning processes of public lands.

Cooperation

Under NEPA, all federal agencies must complete a NEPA analysis for proposed actions that are likely to cause impacts on the natural or human environment. Federal agencies can designate state and local governments to become formal partners in the NEPA process, as cooperating agencies. A state or local government can be a cooperating agency when it has special expertise with respect to any environmental impact involved in the project proposal. Cooperating-agency status gives the state or local government early input into NEPA analyses and some ability to shape the goals and framework of the federal proposal.

Federal agencies should request participation of cooperating agencies in the NEPA process at the earliest possible time, using the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible when consistent with its responsibility as the lead agency.

Coordination

When creating land-use plans or resource management plans, the BLM and Forest Service are required to coordinate their plans with state and local government plans. Coordination is a separate process from cooperation, and must occur regardless of whether state or local governments were designated cooperating agencies. Agencies must make efforts to draft federal plans that coordinate with state and local plans.

Consistency

Consistency between federal, state, local, and tribal plans is the desired outcome for the coordination and cooperation process required of federal agencies. The importance of coordination and cooperation between state, local, and federal agencies during planning processes cannot be overstated. Early

involvement and equal consideration in environmental reviews, as interdisciplinary team members, stakeholders, and cooperating agencies is the State of Utah's main objective and motivation for the creation of the State Resource Management Plan originally adopted on January 2,2018.

It is the intent of Cache County that this CRMP and subsequent implementation plans shall be followed unless inconsistent with any statute or duly promulgated regulation. Should any part of this policy document or implementation plan be found inconsistent with such statute or regulation, or found by court with competent jurisdiction to be void, unenforceable, or invalid, the remaining provision or parts shall nevertheless remain in full force and effect.

Elements of the Countywide Resource Management Plan

The resources included in this CRMP are examined and discussed from the same perspectives throughout the document.

- Resource Section
    - General description
    - Map
    - Resource Management Setting
        - Context
        - Findings
        - Legal Context
    - Desired Future State
    - Resource Management Objectives
        - Policies and Guidelines
    - References

Each Resource begins with a general description of the resource, which is followed by an examination of its present condition or status. Legal and administrative background and history are discussed. The section then presents goals and objectives associated with each resource, and the section then concludes with strategies and procedures to reach the desired future conditions.

Subsections included in each section of this document are Context, Findings, Legal Context, Desired Future State, Management Objectives, and Policies and Guidelines. Each of these is explained below.

The **Context** subsection provides an overview of the resource as it pertains to public lands in Cache County. Many resources occur on public lands and are managed directly by federal land managers, but not in all cases. If a resource does not occur on public lands (such as in the Agriculture Section), this paragraph will explain how policy goals and objectives for the resource applies to public lands.

The **Findings** subsection provides specific information about the resources in terms of types, acreage, and locations, as well as a map of the resource, if it is appropriate. The information provided in this subsection is the most current information available at the time of publication.

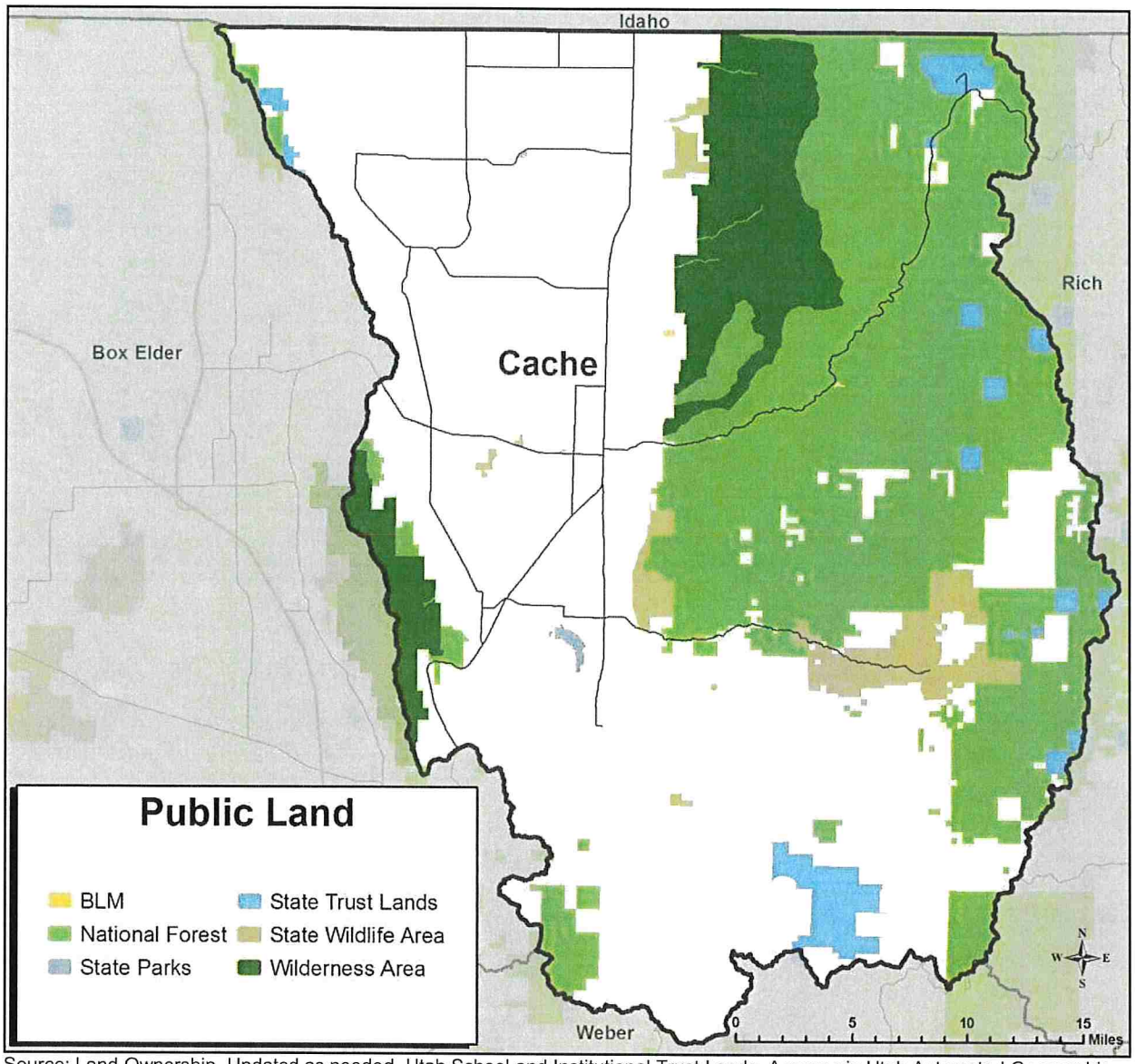
The **Legal Context** subsection provides specific federal and state laws that apply to the resource, along with an overview of their implications for management. Most important here are the major legislation establishing procedures, determining authority, and specific regulations managers should consider for each resource. Federal laws are presented first, followed by state laws.

The **Desired Future State** subsection functions as an explanation of overall goals for each resource. The statement was first developed by summarizing existing objectives from federal, state, and local plans relevant to Cache County. Statements were refined after receiving public comment through a series of public meetings, a public online survey, and other stakeholder meetings.

Management Objectives are high-level management goals that will move Cache County toward the Desired Future State. These objectives are broad policy statements used to organize specific policies and guidelines. Objectives were selected based on public and internal comments, as well as survey responses.

Policies and Guidelines are specific actions and best management practices that can be used to achieve Management Objectives and Desired Future State. The policies and guidelines are derived from relevant scientific documents and existing plans.

The map below displays the current federal and state public lands in Cache County. The management objectives cover resources within these public lands.



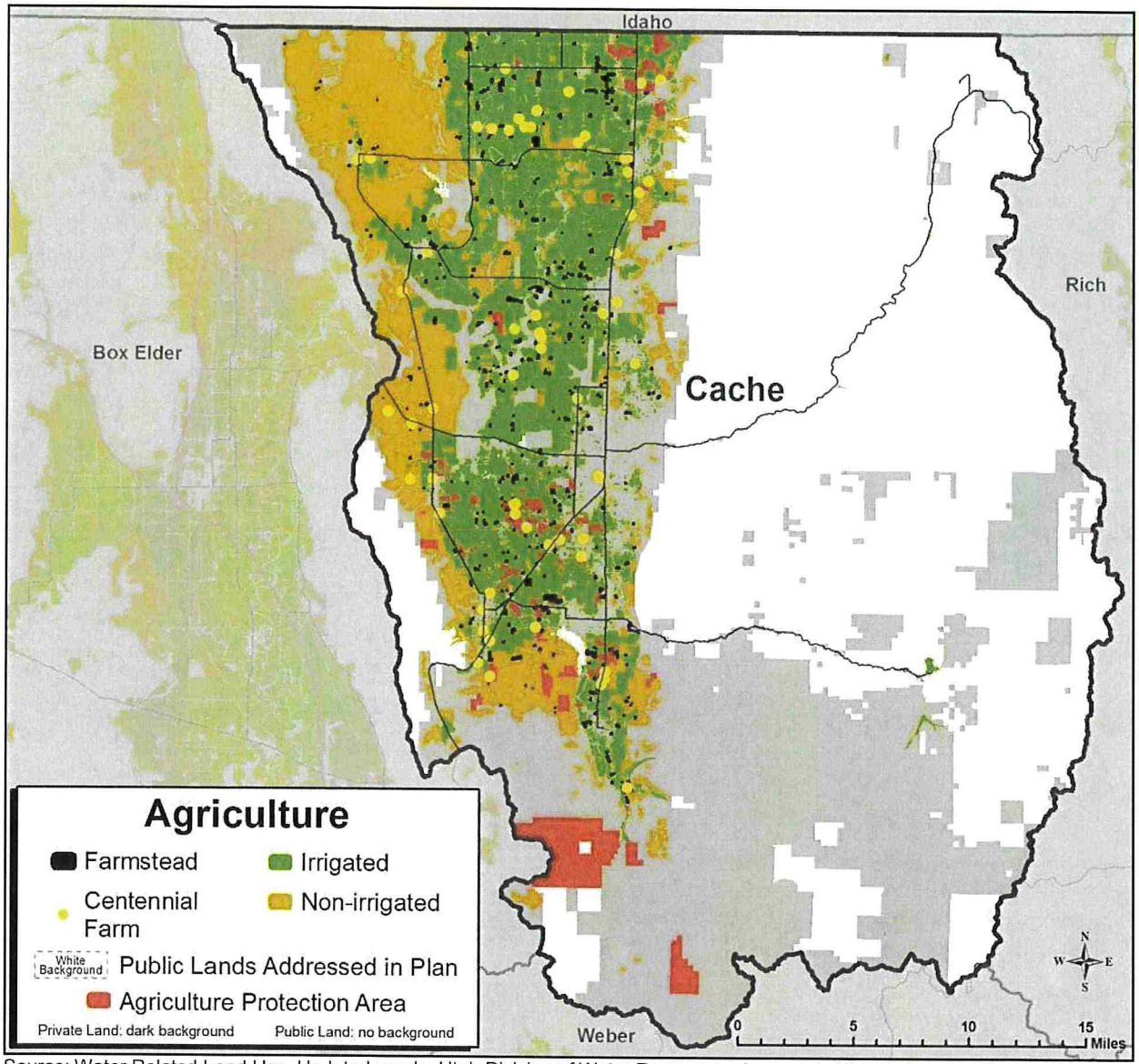
Source: Land Ownership, Updated as needed, Utah School and Institutional Trust Lands, Access via Utah Automated Geographic Reference Center.

1. AGRICULTURE

Agriculture is the activity of converting natural resources into food and material goods in support of both regional and national economic production, and it is an activity fundamental to establishing food security. With the advent of the railroads and pioneer settlement in Utah, agriculture became an integral endeavor throughout the state. Agriculture was not new to the western United States, but the intensity and scale of crop production significantly increased due to the demand created by railroad workers, pioneer settlers, and others. Crops including fruits, vegetables, and grains are all grown in Utah's soils, though livestock feed crops make up much of the state's production. Additionally, many materials used for technological purposes are derived from crops, such as building materials and medical supplies. Although Utah does not have as much agricultural production as other states, Utah's agriculture contributes to the local, regional and national food security, as well as the economy.

Related resources:

- Livestock and Grazing
- Irrigation
- Ditches and Canals



Source: Water Related Land Use, Updated yearly, Utah Division of Water Resources, Access via Utah Automated Geographic Reference Center. Farm data, Date Unknown, Bear River Association of Governments. Agriculture Protection Area data, Date Unknown, Cache County GIS Service.

1.1 Management Setting

1.1.1 Context

Agriculture is primarily concerned with the cultivation of crops, including fruits, vegetables, grains, and feed crops. Agriculture is a significant component of the economy of Cache County and is an important part of the lifestyle of its residents. In Cache County, agricultural activities occur primarily on private lands, not public lands. Agriculture on private lands is closely associated with livestock production, which relies heavily on access to public lands for grazing. Agriculture also relies heavily on water produced by watersheds on public lands.

The Blacksmith Fork and North Cache Conservation Districts of the Natural Resource Conservation

Service identified agricultural land preservation as one of five natural resource priorities for Cache County because prime farmland is threatened by urban development.[1]

1.1.2 Findings

The 2012 market value of agricultural products sold from Cache County farms was $142.8 million.[2] Table 1.1 shows that the number and size of farms in Cache County has slightly increased since 2002, based on statistics from the US Department of Agriculture. According to County GIS data 14,573 acres are in Agriculture Protection Areas.

Table 1.1. Number and size of farms in Cache County not on public lands from 2002, 2007, and 2012.

FARM DATA	2002	2007	2012
Number of farms	1,194	1,195	1,217
Land in farms (acres)	246,586	251,550	268,511
Average size of farm (acres)	207	211	221

Source: US Department of Agriculture National Agricultural Statistics Service.[2,3,4]

1.1.3 Legal Context

Applicable laws include the Clean Water Act (Federal Water Pollution Control Act) (33 USC §1251 et seq. [1972]) and the Utah Water Quality Act (Utah Code §19-5), which aim to prevent water pollution, including from agricultural sources. The Clean Water Act specifically excludes agricultural runoff and irrigation return flow from some regulations that apply to other industries. See Section 25, Water Quality and Hydrology for more information.

Other laws applicable to agriculture include the Clean Air Act (42 USC §7401 et seq. [1970 amended 1990]) and the Utah Air Conservation Act (Utah Code §19-2).

1.2 Desired Future State

Cache County desires to protect the economic viability of working lands within the valley through the proper management of air and water on public lands.

1.3 Management Objectives and Associated Policies and Guidelines

1.3.1 Management Objective

Maintain active county and citizen participation in federal and state public land/resource planning processes.

Policies and Guidelines

a. Participate and encourage citizen participation in federal and state public land/resource planning processes.

1.3.2 Management Objective

Reduce pollution in water and air.

Policies and Guidelines

a. Support measures and practices that reduce pollution in water and in the air.

1.4 References

[1] USDA, Natural Resource Conservation Service. Cache County Resource Assessment. September 2011.

[2] USDA: National Agricultural Statistics Services. 2012. County Summary Highlights. https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Utah/st49_2_001_001.pdf (accessed March 23, 2017).

[3] USDA: National Agricultural Statistics Services. 2007. County Summary Highlights. https://agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_2_County_Level/Utah/st49_2_001_001.pdf (accessed March 23, 2017).

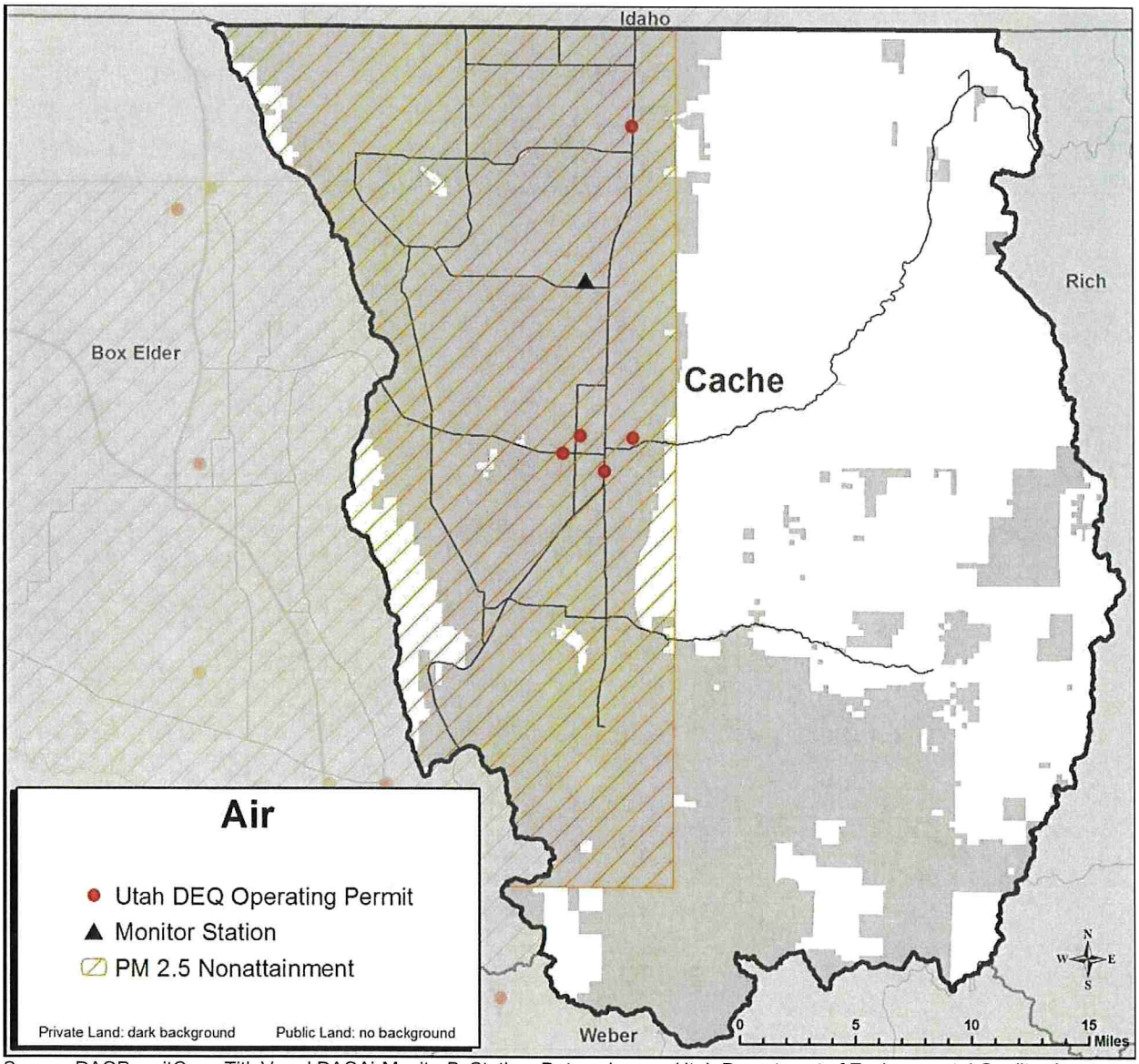
[4] USDA: National Agricultural Statistics Services. 2002. County Summary Highlights. https://www.agcensus.usda.gov/Publications/2002/Volume_1,_Chapter_2_County_Level/Utah/st49_2_001_001.pdf (accessed March 23, 2017)

2. AIR

The term "air quality" refers to the degree to which ambient (outdoor) air is free of pollution. Air pollutants are those substances present in ambient air that negatively affect human health and welfare, animal and plant life, property, and the enjoyment of life or use of property. Ambient pollutant concentrations result from interaction between meteorology and pollutant emissions. Because meteorology can't be controlled, emissions must be managed to control pollutant concentrations.

Related resources:

- Fire Management
- Forest Resources



Source: DAQPermitCompTitleV and DAQAirMonitorByStation, Date unknown, Utah Department of Environmental Quality, Access interactive map https://enviro.deq.utah.gov and https://deq.utah.gov/Pollutants/P/pm/pm25/areas.htm.

2.1 Management Setting

2.1.1 Context

The Clean Air Act of 1970 and its amendments set the laws and regulations regarding air quality, give authority to the US Environmental Protection Agency (EPA) to set standards and rules, and delegate regulatory authority to individual states with EPA oversight, provided certain criteria are met. The purpose of air quality conformity regulations, which in Utah are enforced by the EPA and the Utah Division of Air Quality (DAQ), is to protect public health and welfare by lowering pollutant concentrations through a reduction in emissions.

The Clean Air Act Amendment of 1990 established three designations for areas based on how ambient air quality conditions compare to the National Ambient Air Quality Standards (NAAQS): nonattainment areas, maintenance areas, and attainment areas. Attainment and nonattainment areas are those with air quality better or worse (respectively) than the NAAQS. If an area is designated nonattainment, the relevant air quality management agency must create and implement a plan for emissions and reduce concentrations below the NAAQS. The air quality management agency must maintain the plan used to meet the NAAQS and prepare a maintenance plan to keep the air clean for the next 20 (or more) years. A maintenance area is one that was in nonattainment but reduced emissions sufficiently to meet the NAAQS. It must maintain those rules and actions that reduced emissions for a period of 10 years.

Air quality is influenced by activities on private and public lands. Activities on public lands that impact air quality include:

- Recreation users driving to public lands to visit.
- Recreation users driving on dirt roads within public land boundaries.
- Controlled-burn activities to manage vegetation and wildfires within public land boundaries.
- Permitted extractive activities, such as mining, on public lands.

2.1.2 Findings

The Utah Department of Environmental Qualities issues operating permits according to Title V of the Clean Air Act. Table 2.1 lists the five entities in Cache Valley that have Title V operating permits.

Table 2.1. Clean Air Act Title V Operating Permits in Cache Valley.

Permit Holder	City
Carriage Industries LLC- Trailer Manufacturing Plant	Logan
City of Logan- Logan City Landfill	Logan
Logan City Light and Power Department- Power Plant	Logan
Pepperidge Farm Incorporated- Commercial Bakery	Richmond
Utah State University- Main Campus	Logan

Source: GIS data DAQPermitCompTitleV, Date unknown, Utah Department of Environmental Quality, Access interactive map https://enviro.deq.utah.gov.

Cache County is designated nonattainment for small particulate matter pollution (PM 2.5).[1] The EPA used the following factors in the designation of nonattainment:[2]

- Pollutant emissions
- Air quality data
- Population density and degree of urbanization
- Traffic and commuting patterns
- Growth
- Meteorology
- Geography and topography
- Jurisdictional boundaries
- Level of control of emissions sources.

Winter inversions are common in Cache Valley and trap pollutants in the valley. Exposure to particle pollution has been linked to the following health problems:[2]

- Increased respiratory symptoms
- Decreased lung function
- Aggravated asthma
- Development of chronic bronchitis
- Irregular heartbeat
- Nonfatal heart attacks
- Premature death in people with heart or lung disease.

2.1.3 Legal Context

Applicable Laws

The Clean Air Act of 1970 (42 USC §7401 et seq. amended 1990) places control of local air quality at the state level with federal oversight provided certain criteria are met. The act also requires state and local ambient air quality standards be equal to or lower in concentration than the NAAQS. Utah laws (Utah Air Conservation Act [Utah Code §19-2]) and rules regarding air quality set the state standards equal to the NAAQS. The local air quality management agency for Cache County is the DAQ. Rules and policies pertaining to air quality activities and plans to achieve NAAQS attainment are set by the Utah Air Quality Board. The DAQ conducts statewide air quality monitoring, air quality research, air emissions permitting, air quality compliance monitoring, air quality compliance planning activities, public education, public outreach, and other support programs. The DAQ also supports the Air Quality Board in fulfilling its purposes.

2.2 Desired Future State

Cache County desires to maintain or improve air quality to meet federal standards to protect public health, environmental health, and visual resources.

2.3 Management Objectives and Associated Policies and Guidelines

2.3.1 Management Objective

Support efforts on public lands that improve air quality from nonattainment to maintenance for all NAAQS monitored pollutants.[3]

Policies and Guidelines

a. Support or conduct public awareness campaigns about current air quality conditions, forecasts, and activities and practices to encourage individuals to do their part to reduce air pollutant emissions.

b. Adhere to the control measures for emissions of stationary point sources, area sources, on-road mobile sources, and off-road mobile sources as identified in the State Implementation Plan for the Logan area.[2]

c. Ensure management activities and proposed projects meet federal air quality standards. Similar policies exist on US Forest Service (Forest Service) land.[4]

d. Limit airborne particulates by mitigating human-made disturbances, such as requiring dust-control measures and revegetation for all mechanical ground-disturbing projects on public lands.

2.3.2 Management Objective

Reduce smoke from wildland fire and prescribed fire during times of impaired air quality.

Policies and Guidelines

a. Control wildfire to the extent practical through forest vegetation management activities, prescribed burning, and other management actions.

b. Coordinate with the Forest Service and Utah Forestry, Fire, and State Lands for appropriate burn windows for prescribed fire.

c. Educate the public that although prescribed fire pollutes, it reduces overall pollution by reducing catastrophic wildfires.[5]

2.4 References

[1] Utah DEQ, 2013. Utah Nonattainment Areas (map). Division of Air Quality. https://deq.utah.gov/ProgramsServices/programs/air/aqmodeling/docs/2013/03Mar/NONATTAINMENT_MAP.pdf (accessed April 10, 2017).

[2] Utah Air Quality Board, 2014, Utah State Implementation Plan, Section IX. Part A.23.

[3] Utah Division of Air Quality 2014 Annual Report, p.3.

[4] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (Accessed March 23, 2017).

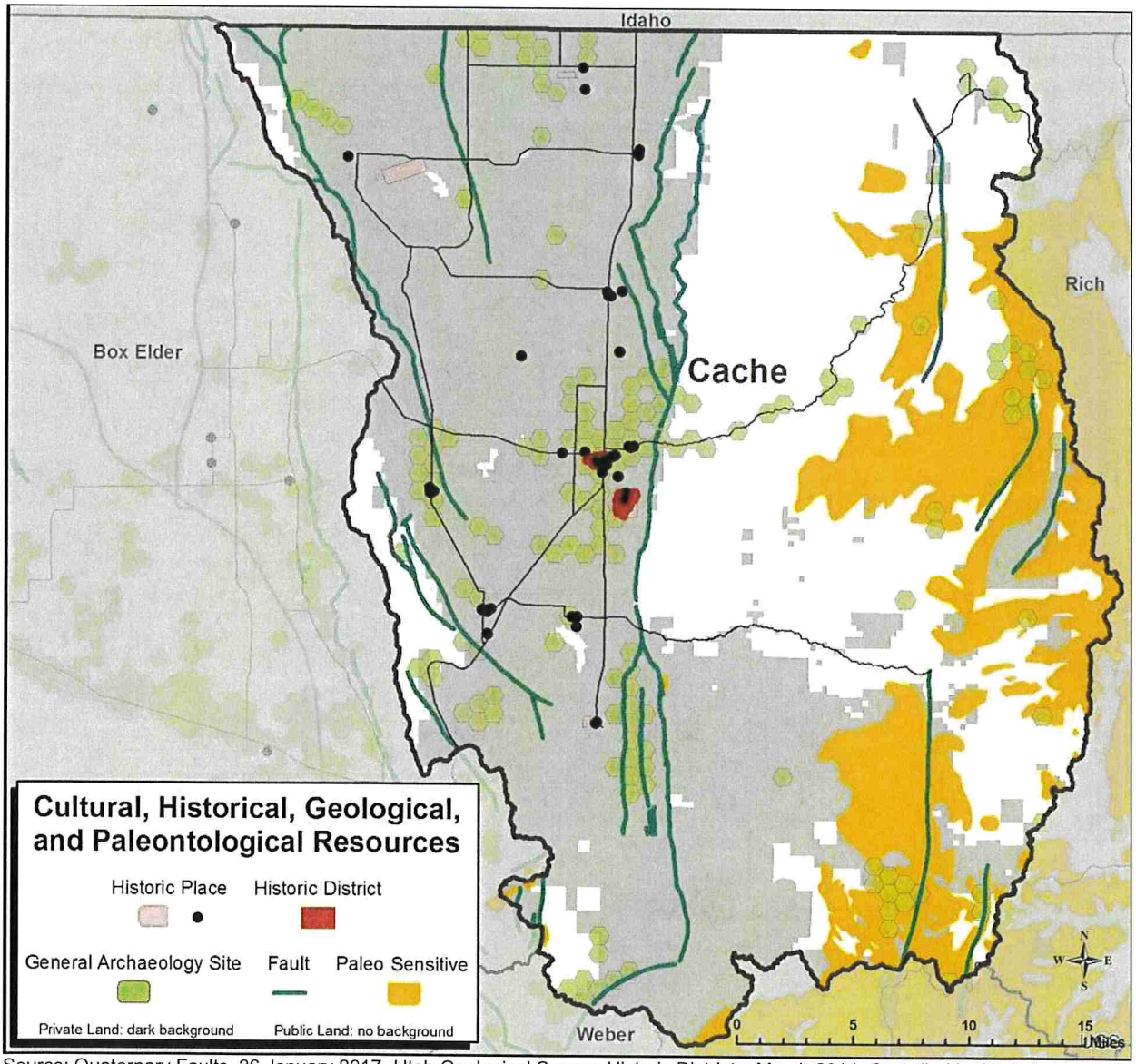
[5] Engel, Kirsten H. 2013. Perverse Incentives: The Case of Wildfire Smoke Regulation. Ecology Law Quarterly, Vol. 40:623.

3. CULTURAL, HISTORICAL, GEOLOGICAL, AND PALEONTOLOGICAL RESOURCES

These resources have intrinsic value based on their age, heritage, scientific importance, or other intangible significance. However, these resources also highlight the unique character of the local setting and may contribute to attracting business and tourism. Geology is an important planning component within the region because of Cache County's unique geologic features and sites, as well as potential hazards to development such as faults, landslides, rockfalls, and soil liquefaction.

Related resources:

- Recreation and Tourism
- Land Use



Source: Quaternary Faults, 26 January 2017, Utah Geological Survey. Historic Districts, March 2014, Compiled by Utah Automated

Geographic Reference Center. Archaeology Sites, Updated as needed, Utah State Historic Preservation Office. UT_SITLA_Mineral_PaleoSensitivityArea, Date unknown, Utah Geological Survey. Access via Utah Automated Geographic Reference Center. Also, nris_public, Current properties listed on National Register of Historic Places, National Park Service.

3.1 Management Setting

3.1.1 Context

Cache County has a rich and diverse history. Its name comes from the early trappers' practice of hiding (caching) pelts and supplies.[1] Cache Valley served as a rendezvous place for Plains groups, the local Shoshone, and then for trappers and explorers.[2] Members of the The Church of Jesus Christ of Latter-day Saints began settling in the area in 1855.[2] The Utah Northern Railroad between Logan and Brigham City was completed in 1873 and later extended into Idaho. Utah State University was established as a land-grant agricultural college in 1888.[2] In the 1900s Cache County became a major producer in the State of dairy and agricultural products as well as attracting manufacturing firms.[2]

Cultural and Historical Resources

Cultural resources include archaeological sites, standing structures (e.g., buildings and bridges), and places of importance that are more than 50 years old. Many historical and cultural resources are very sensitive and protected by law; however, it is important to remember that not all cultural sites are important or significant, and that those not considered as such would not be adversely affected by any planned projects.

Paleontological Resources

These resources are defined as the remains, traces, or imprints of ancient organisms preserved in or on the earth's crust, providing information about the history of life on earth.

Geological Resources

Geological resources include unique scenery or geologic features, as well as the potential for hazards to human development associated with steep slopes, surface fault rupture, liquefaction, landslides, rockfall, flooding, debris flows, and shallow groundwater.

3.1.2 Findings

Cultural Resources

When considering plans for alterations to the landscape, it is important to remember that there can be archaeological sites, historic sites, and standing structures in those locations that may be of importance to many people. This is true despite the fact that the resource may not look interesting, may be in disrepair, or may even be in ruins. The history and importance of a location cannot always be easily interpreted.

Undeveloped Rural (including Desert and Mountain) Settings

Prehistoric sites in undeveloped rural/desert/mountain settings may include:

- Lithic scatters or chipping stations
- Campsites
- Villages
- Rock art
- Processing sites
- Quarry sites (where rock materials were acquired for making tools)

Historic sites in undeveloped rural/desert/mountain settings may include:

- Cabins
- Mines
- Railroads
- Industrial sites
- Roads/trails
- Bridges
- Irrigation infrastructure
- Small, isolated town sites
- Transmission, telephone, and telegraph lines
- Pipelines for water, gas, or petroleum products

Developed Rural Settings

This type of setting includes rural areas where there maybe existing and former small towns, where subdivisions may be planned, where developed recreation sites may exist, and where orchards or other agricultural activities take place.

Prehistoric sites in rural settings may include:

- Sites similar to those listed above
- Even larger village sites if permanent water sources are present and elevation is not high

Historic sites in rural settings may include:

- Sites similar to those listed above
- Town sites
- Agricultural activity sites
- Canals and ditches
- Farmsteads
- Fences
- Orchards and associated buildings and other features

Urban Settings

In these locations, a wide variety of sites can be found and, depending upon their age, history and integrity, they may be quite important. In urban settings, buildings, structures, historic landscapes, and urban detail might be expected. Although remnants of agricultural elements from earlier time periods might also be present. Linear sites, such as old transmission lines and pipelines, would be reduced in number or not visible.

Prehistoric sites in urban settings may include sites similar to those listed above, though usually highly disturbed, destroyed, or obscured.

Historic sites in urban settings may include:

- Dense occupation with both commercial and multifamily residential structures in downtowns and single-family residential structures in suburban areas

- Industrial sites, sometimes densely spaced
- Remnant farmsteads, fences, orchards, other agricultural features
- Railroads
- Considerable infrastructure features including sidewalks, traffic signals, street lights, power lines, fire hydrants, and many other visible features

Cultural resource locations are generally sensitive and are therefore not released publicly.

Paleontological Resources

After becoming acquainted with how fossil resources are regulated within the state, it is important to consult with paleontologists at the Utah Geological Survey (UGS). This will help determine whether there is potential for paleontological resources within a proposed project or planning area and to provide information about state laws and regulations regarding paleontological resources and how to proceed. In some cases, it may not be necessary to do further work. However, depending upon the situation and location of a particular project, hiring a professional paleontologist may be required to navigate the process.

Types of paleontological localities include:

- Invertebrate localities, which are fossil remnants of multi-celled lifeforms without vertebral columns, backbones, vertebrae, or full-length notochord.

- Vertebrate localities, which include fossil remnants of lifeforms with some form of vertebrae. This may include mammals, dinosaurs, fish, birds, and reptiles.

- Floral localities, which are remnants of plants.

- Trace fossils, which may include skin impressions, track sites, and remnants of burrows or borings.

Potential Fossil Yield Classification System

Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources. The US Department of Interior defined the classification system for potential paleontological resources on public lands in a 2016 instruction memorandum. [3]

Geologic Hazards

The UGS provides technical information and assistance regarding earthquakes and geologic hazards.

3.1.3 Legal Context

Applicable Laws

Cultural Resources

Because the application of the laws and regulations for cultural resources are complex and can be difficult to understand, it is usually a good idea to consult with a professional archaeologist or architectural historian concerning how to proceed with a particular project.

Federal laws must be considered if project plans include federal land. The same is true if federal licensing or federal funds are involved. In accordance with federal laws and regulations, project undertakings must take into account their effects upon potential historic properties. The following federal legislation and direction are the most pertinent:

- Antiquities Act: 16 USC §431 et seq. (1906)
- Historic Sites Act: 16 USC §461 et seq. (1935)
- National Historic Preservation Act: §16 USC 47 et seq. (1966)
- National Environmental Policy Act (NEPA): 42 USC §4321 et seq. (1969)
- Executive Order 11593: Protection and Enhancement of the Cultural Environment (1971)
- Executive Order 13007: Indian Sacred Sites (1997)
- Archaeological and Historical Conservation Act: §16 USC 469 et seq. (1974)
- Archaeological Resources Protection Act: 16 USC §470 et seq. (1979)
- American Indian Religious Freedom Act: 42 USC §1996 et seq. (1978)
- Native American Graves and Repatriation Act: 25 USC §3001 et seq. (1990)
- Omnibus Public Land Management Act, Subtitle D – Paleontological Resources Preservation: 16 USC 470aaa (2009)

The State of Utah also has several laws with implementing regulations, which may be applicable to project planning and undertakings including:

- Utah Antiquities Protection Act: Utah Code §9-8-101-806
- Abuse or Desecration of a Dead Human Body: Utah Code §76-9-704

Paleontological Resources

There are no state requirements for paleontological resources on private lands. Should the State Paleontologist identify a particular area as sensitive for such resources that lie on state lands or federal lands, it will likely be necessary to hire a professional paleontologist to assist in the project. The State of Utah does not maintain a list of qualified paleontologists with permits for state lands in Utah, but the US Bureau of Land Management (BLM) does maintain a list of permitted paleontologists with permits for BLM lands. These professionals are not only qualified to work on federal lands, but on most any project undertaken in Cache County.

There are federal and state laws and regulations protecting significant paleontological resources as follows: Antiquities Act (16 USC §432, 433 et seq. [1906]) and NEPA (42 USC §4321-4327 [1969]). However, the most recent and most important law protecting paleontological resources on federal lands (except Indian Reservations) is the Omnibus Public Land Management Act, Subtitle D – Paleontological Resources Preservation (P.L. 111-011; 123 Stat. 1172; 16 USC 470aaa). In addition, the US Bureau of Land Management has developed regulations for the protection of paleontological resources on lands administered by their field offices. Applicable Utah State legislation consists of the Antiquities Protection Act (Utah Code §9-8-101-806).

Geologic Resources

Utah Code §17-27a-401-2-e (County) and 10-9a-401-2-e (Municipal) require general plans to "promote health, safety, and welfare" through the protection of urban development. State statutes allow local jurisdictions to address geologic hazards through zoning districts and ordinance to regulate land used in floodplains and potential geologic hazard areas (Utah Code §17-27a-505-1-c (County) and 10-9a-505-1-c (Municipal). Utah Code §17-27a-703 (County) and 10-9a-703 (Municipal) defines a process for private

property owners within counties and municipalities to appeal land use decisions restricting development in areas defined as geologic hazards.

3.2 Desired Future State

Cache County desires to preserve its historical, cultural, and prehistoric resources, where they exist on public lands. Similarly, the county desires to manage paleontological resources to safeguard their scientific and educational values, as well as to promote public benefit and enjoyment. Cache County desires to protect its existing unique and scenic geologic resources on public lands, and to ensure that land use activities on public lands do not increase the risk from geologic hazards--development and recreation should be restricted in hazardous areas to protect life and property.

3.3 Management Objectives and Associated Policies and Guidelines

3.3.1 Management Objective

Preserve and improve cultural, historical, heritage, prehistoric, and archaeological sites and resources.

Policies and Guidelines

a. Support public education efforts about the values of preserving their historic and prehistoric heritage.

b. When action is taken, consult the Utah Division of Indian Affairs and US Bureau of Indian Affairs to facilitate contact with Native American Tribes.

c. Coordinate with the Utah State Historic Preservation Office for information about whether there are known or expected cultural resources existing within a project area.

3.3.2 Management Objective

a. Manage Cache County's paleontological resources to safeguard their scientific and educational values.

b. Support preservation of locations of scientifically important paleontological resources on public lands.

c. Support coordination with the UGS State Paleontologist to assess potential for paleontological resources with a project or planning area.

Policies and Guidelines

a. Discourage illegal collection of historical, cultural, or geological artifacts throughout the county with a combination of public education, outreach, and law enforcement efforts.

3.3.3 Management Objective

Preserve Cache County's iconic geologic resources.

Policies and Guidelines

a. Identify iconic geologic resources within Cache County and ensure they are considered during Forest Plan development and NEPA analysis for new projects.

3.3.4 Management Objective

Coordinate with state and federal agencies, such as the UGS and US Geological Survey, to identify potential geologic hazards in the county. Ensure proper land use management on public lands to restrict activities that might increase geologic hazards or put property and lives at risk from geologic hazards.

Policies and Guidelines

a. Identify and evaluate areas of erosion on public land and determine improvements.[4]

b. Identify known geologic hazards through consultation with UGS and utilization of existing hazard mapping.

c. Coordinate with public land managers to ensure geologic hazards are considered during Forest Plan development as well as NEPA analysis for new projects.

3.4 References

[1] Utah Division of State History, I Love History Cache County Webpage. http://ilovehistory.utah.gov/place/counties/cache.html#cool (accessed May 4, 2017).

[2] Utah State Historical Society. 1988. A Brief History of Cache County, from Beehive History 14. http://onlinelibrary.utah.gov/research/utah_counties/cache.html (Accessed May 4, 2017).

[3] US Department of Interior, Bureau of Land Management. 2016. Potential Fossil Yield Classification System. https://www.blm.gov/sites/blm.gov/files/uploads/IM2016-124_att1.pdf (Accessed May 19, 2017).

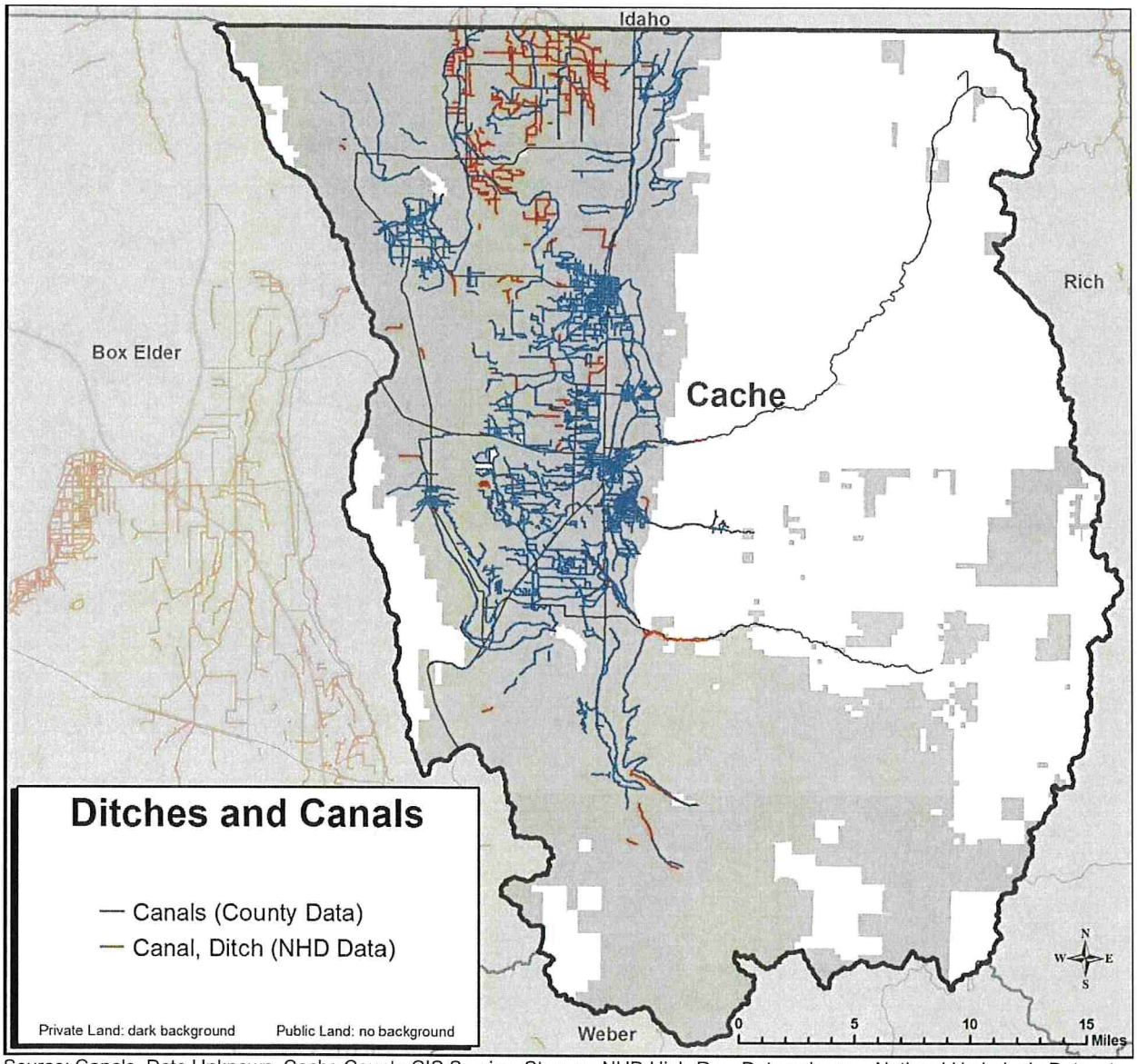
[4] US Bureau of Land Management, Salt Lake District. 1990. Proposed Pony Express Resource Management Plan and Final Environmental Impact Statement. http://www.blm.gov/style/medialib/blm/ut/natural_resources/planning/existing_lups6.Par.40049.File.dat/PONYFEIS.PDF (accessed April 2017).

4. DITCHES AND CANALS

Ditches, canals, and pipelines are used to convey diverted water from the source to the location where its beneficial use is taken. The term "conveyance" is used to describe the movement of water from source to application. Water pipelines are used to convey water when open channels are not suitable, such as for drinking water.

Related resources:

- Irrigation
- Water Rights
- Agriculture



Source: Canals, Date Unknown, Cache County GIS Service. Streams NHD High-Res, Date unknown, National Hydrologic Dataset, Access via Utah Automated Geographic Reference Center.

4.1 Management Setting

4.1.1 Context

Cache County's public lands serve as a primary water source supplying many irrigation systems in the valley. Irrigation systems are an integral element for agricultural viability in Cache County. The use, upgrade, and maintenance of the county's network of canals, ditches, and dams continues today. Many of the canals and ditches remain open, but over time some have been lined or piped to improve operational efficiency and for safety reasons.

Dams, diversion, canals, and pipelines are constructed to take advantage of the topography of each watershed and redistribute water from rivers and streams outward to lower elevation lands, which are more suitable for crop production. Ditch and canal systems may also be relied upon for urban landscape watering and gardens as well as for storm water drainage.

The Blacksmith Fork District and North Cache Conservation District of the Natural Resources Conservation Service identified Water Distribution Systems as one of five natural resource priorities for Cache County because of the aging infrastructure.[1]

4.1.2 Findings

According to Cache County's own dataset, the county has 899 miles of canals and ditches. Of that total, 22 miles (2.4%) are on public lands (Table 4.1).

Table 4.1. Miles and percentages of ditches and canals in Cache County by land ownership.

LANDOWNER	MILES OF DITCHES/CANALS	PERCENTAGE
Federal	14	1.5
State	8	0.9
Private	877	97.6
Total	899	100

Source: Cache County Canal Dataset.

4.1.3 Legal Context

Water is appropriated to water users downstream based on state regulations spelled out in Utah Code Title 73, Water and Irrigation. Point of diversion data, stream alteration data, place of use data, and adjudication areas data can be used by Cache County to help determine areas of the county that may have complex water rights issues. See Section 26, Water Rights, for more information regarding water rights in Cache County.

Other applicable laws include the Clean Water Act (Federal Water Pollution Control Act) (33 USC §1251 et seq. [1972]) and the Utah Water Quality Act (Utah Code §19-5).

4.2 Desired Future State

Cache County desires to protect and enhance existing water conveyance systems when they occur on public lands.

4.3 Management Objectives and Associated Policies and Guidelines

4.3.1 Management Objective

Support efforts that protect Cache County's existing water conveyance systems on US Forest Service lands, especially structures used to divert water into canal systems.

Policies and Guidelines

a. Coordinate with Forest Service and water companies in Cache County to protect and enhance existing water conveyance systems.

4.3.2 Management Objective

Reduce impacts to Cache County's natural resources from water conveyance infrastructure.

Policies and Guidelines

a. Support public education efforts on the transmission and impacts of Aquatic Invasive Species and proper equipment-cleaning protocols.

b. Support the removal of in-stream barriers (where practical) and creation of selective fish-passage structures around barriers that cannot be removed.[2]

4.4 References

[1] USDA, Natural Resource Conservation Service. Cache County Resource Assessment. September 2011.

[2] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah Wildlife Action Plan, Draft Version 6-4-2015. https://wildlife.utah.gov/wap/wap2015draft.pdf (accessed March 14, 2017).

5. ECONOMIC CONSIDERATIONS

With 1,173 square miles and a population of over 112,000 residents, Cache County ranks 20th in terms of size in the State but 4th in population. Logan is the county seat. The county has 19 incorporated cities and towns.

Related resources:

- Recreation and Tourism
- Land Use

5.1 Management Setting

5.1.1 Context

Cache County has a diverse and robust economy with a growing population. The proximity and easy access to public lands in Cache County is an incredible asset to the residents and visitors alike. The overall economy of the county is best served by prioritizing protective land uses and management objectives over resource development and extraction.

5.1.2 Findings

Local socioeconomic impact of agency decisions. Federal planning processes require an assessment of potential impacts to local economies and social environments including historical and cultural elements. It is critical that agency analyses adequately convey the relevance or "linkages" between this information and county public land and resource interests.

Relative impact of agency decisions (local vs. national impact). Cache County recognizes the obligation of federal land managers to manage public lands in the public's interest according to national perspectives.

Cache County receives an annual payment in lieu of taxes (PILT) from the federal government based on the amount of federal lands in the county that do not generate property taxes. In 2016 Cache County received $708,390 based upon 283,109 acres of federal land.[1]

About 76% of the nonfarm jobs in the county are in the service industry, with government, trade transport utilities, and education, health, and social services as the main employers, and 24% of the county's nonfarm jobs are part of the goods production industry.[2] The total market value of agricultural products produced in the county for 2012 was approximately $142,000,000.[3]

5.1.3 Legal Context

Applicable Laws

The US Forest Service (Forest Service) manages land use decisions, including recreation, by developing land and resource management plans, also known as Forest Plans, under the National Forest Management Act (16 USC §1600 et seq. [1976]). The Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]) mandates the US Bureau of Land Management to manage lands, including recreational uses, under multiple-use philosophy. Both federal land managers set recreation policy following planning procedures specified by the National Environmental Policy Act (42 USC §4321 et seq. [1969]).

State laws applicable to recreation and tourism include the Transient Room Tax enabled by Utah Code §59-12-3 et seq., which allows counties to levy a tax up to 4.25% on hotel accommodations. The Tourism, Recreation, Cultural, Convention, and Airport Facilities Tax Act, Utah Code: §59-12-6 et seq. (2008) allows counties to levy a tax up to 4% on short-term motor vehicle rentals. Funds collected under this law may be used for the development, operation, and maintenance of cultural, recreational, or tourist facilities. Utah Code §17-31-8 requires all counties which levy either taxes to form an advisory board to represent industries being taxed. Utah Code §63N-7-1 created the Board of Tourism, which advises the Governor's Office of Economic Development on "planning, policies, and strategies and on trends and opportunities for tourism development."

5.2 Desired Future State

Proximity to high-quality public lands with diverse recreation opportunities is a key amenity for local residents as well as for businesses in Cache County. While consumptive uses such as grazing and timber harvest are important to the local economy, other resources also contribute directly and indirectly to Cache County's economy. Protection of recreation opportunities, as well as maintaining water quality, air quality, and wildlife should be prioritized over extractive and consumptive uses.

5.3 Management Objectives and Associated Policies and Guidelines

5.3.1 Management Objective

Develop and support projects that contribute to the economy in ways that maintain or improve water quality and quantity, air quality, and wildlife habitat.

Policies and Guidelines

a. Support efforts that encourage new and existing industries operating on public lands that reduce air and water pollution or create and maintain wildlife habitat.

5.3.2 Management Objective

Ensure that federal agency decisions are based on accurate, comprehensive, and relevant data that captures and highlights the unique characteristics of Cache County.

Policies and Guidelines

a. Participate in and monitor agency planning processes to ensure that data is gathered and studies are completed in a manner and in detail sufficient to highlight and protect Cache County's interests. Review agency studies and conclusions for consistency with county-conducted analyses.

5.3.3 Management Objective

Support efforts that provide high-quality diverse recreation opportunities on public lands.

Policies and Guidelines

a. Work cooperatively across agencies and local governments to manage public lands with the greatest public interest.

b. Develop and support diverse recreation opportunities on public lands, provide facilities and maintenance necessary to support those opportunities, and when possible separate conflicting user groups.

5.4 References

[1] US Department of Interior, 2017. Payment in Lieu of Taxes, County Payments. https://www.nbc.gov/pilt/counties.cfm (accessed May 4, 2017).

[2] Utah Department of Workforce Services. 2017. Economic Snapshot, Box Elder County, Nonfarm Jobs by Month. Website. https://jobs.utah.gov/wi/regions/county/cache.html (accessed May 4, 20178)

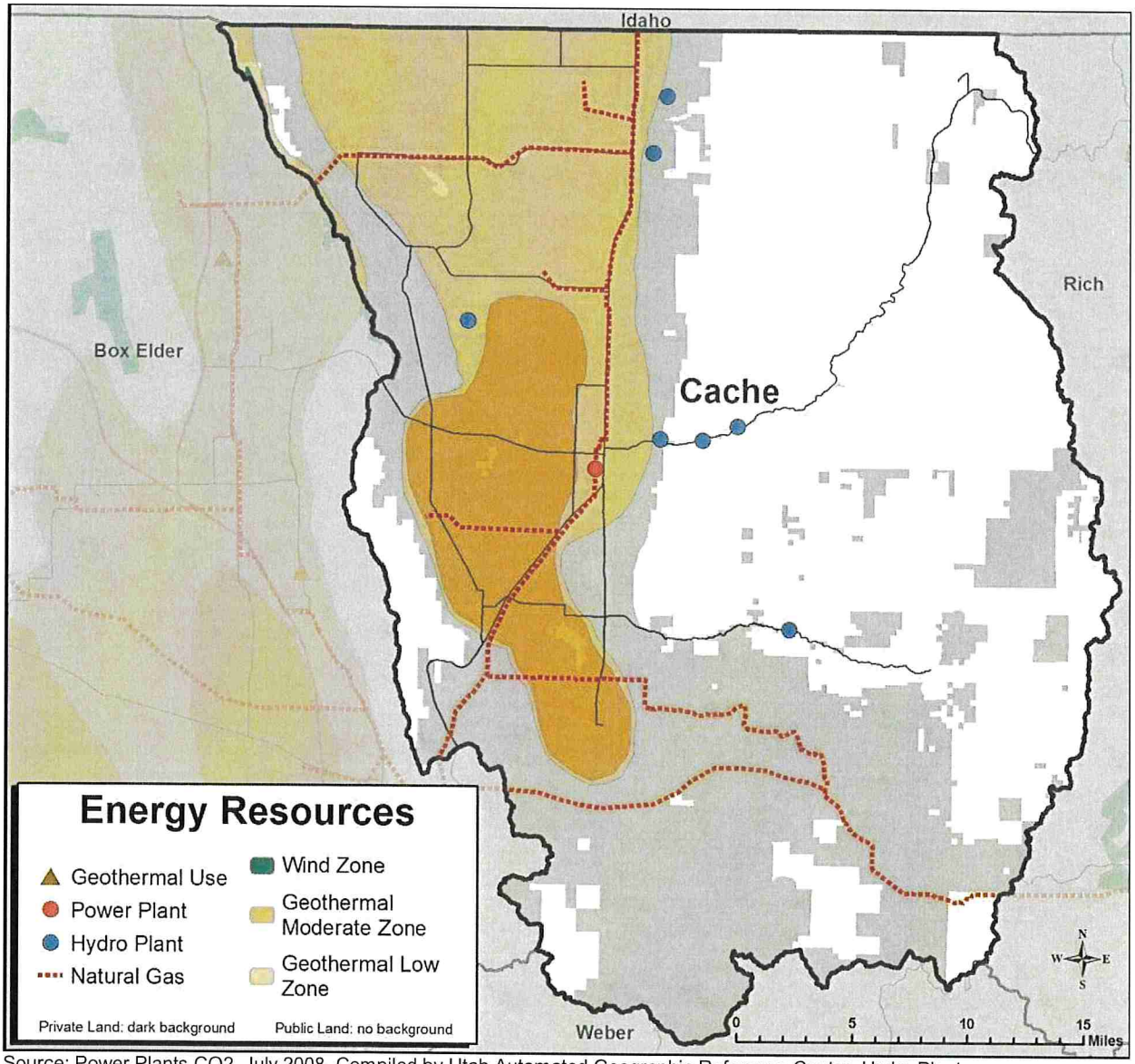
[3] USDA: National Agricultural Statistics Services. 2012. County Summary Highlights. https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Utah/st49_2_001_001.pdf (accessed May 4, 2017).

6. ENERGY RESOURCES

Public and private utilities draw upon Utah's renewable and nonrenewable resources to provide electricity and fuel (e.g. natural gas, propane, oil, gasoline, coal) energy supplies.

Related resources:

- Utilities
- Air Quality
- Mining
- Mineral Resources



Source: Power Plants CO2, July 2008, Compiled by Utah Automated Geographic Reference Center. Hydro Plants, ORNL_EHAHydroPlantV1.1, 2016, National Hydropower Asset Assessment Program. Geothermal Power Production Potential and Pipelines, Date unknown, Utah Geological Survey. Utah Renewable Energy Zone. UREZ Phase 1 Wind Zones, Date unknown, Utah Renewable Energy Zone. Access via Utah Automated Geographic Reference Center.

6.1 Management Setting

6.1.1 Context

Energy resources includes the development and production of energy (i.e. fossil fuel and renewable) as well as the transmission of energy across public lands (i.e. powerlines, pipelines, etc.). Fossil fuel energy production in Cache County is limited. Hydroelectric power is generated on several dams around the county, some on public lands.

Planning for energy development on federal lands is managed by the US Forest Service (Forest Service) and the US Bureau of Land Management (BLM). Energy development on State Sovereign Lands is managed by the Utah Division of Forestry, Fire, and State Lands and the Utah School and Institutional Trust Lands Administration. Regulatory oversight of oil and gas wells is provided by the Utah Division of Oil, Gas, and Mining (DOGM) within the Utah Department of Natural Resources (DNR).

6.1.2 Findings

Fossil fuel energy development is very limited in Cache County. Based on spatial information published by the DOGM, there are no current or historic energy production wells in the county, though there has been exploration.[1]

Cache County has seven hydroelectric plants that generate electricity for use within the county, two of these are on public lands in Logan Canyon and one is on public lands in Blacksmith Fork Canyon. Another hydroelectric plant operated at the mouth of Logan Canyon utilizes water diverted on public lands.

Renewable energy potential is also limited in Cache County. While a 2009 study by the Utah Renewable Energy Zones Taskforce has identified areas of low to moderate geothermal zones throughout the valley bottom, there is limited economical solar and wind potential.[2]

Energy transmission via pipelines is prevalent in Cache County. The Ruby Natural Gas Pipeline crosses the southern portion the county and at 42-inches in diameter, it is the largest line in the county. Several smaller natural gas lines (8–12-inch) operated by Questar Gas distribute natural gas to customers throughout the county. These pipelines cross private, state, and federal lands.

6.1.3 Legal Context

Applicable Laws

The Mineral Leasing Act of 1920, as amended (30 USC §§181 et seq.) is the major federal law governing development of oil, gas, coal, and other hydrocarbons on public lands. This act instructs the US Department of Interior via the BLM to lease extraction rights for energy production on lands managed by the BLM and Forest Service. The Geothermal Steam Act of 1970 (30 USC §§1001 et seq.) authorizes the US Department of Interior via the BLM to lease extraction rights for geothermal resource production on lands managed by the BLM and Forest Service.

Applicable state laws include Utah Code §40-6-1 et seq. which established the DOGM within the DNR with authority to regulate oil and gas mining as well as promote the development and production of oil and gas. In 1982 DOGM obtained primacy from the Environmental Protection Agency for regulation of Class II Water Injection Wells; this program regulates disposal of produced water from oil and gas wells, and reinjection of fluids for pressure maintenance and secondary recovery operations in oil and gas fields.

6.2 Desired Future State

Cache County desires to limit new fossil fuel energy development within the county. However, the county supports renewable energy development on public lands where potential visual and natural resource impacts can be assessed and mitigated. When there is a need for new energy transmission across public lands in Cache County, the desire is to locate those facilities on previously disturbed and fragmented areas. Cache County desires to promote conservation of energy used to support public lands facilities, operations, and transportation.

6.3 Management Objectives and Associated Policies and Guidelines

6.3.1 Management Objective

Limit new fossil fuel energy development on public lands.

Policies and Guidelines

a. Participate in public land planning efforts to promote measures that limit new fossil fuel development.

6.3.2 Management Objective

Support and encourage renewable energy resource development on public lands, including wind, solar, and geothermal.

Policies and Guidelines

a. Support opportunities for renewable energy resources such as wind, solar, ground-source heat pumps, etc.
b. Utilize the 2009 Utah Renewable Energy Zones Taskforce Report[2] as well as emerging information to make decisions related to renewable energy development.

6.3.3 Management Objective

Coordinate and participate with state and federal agencies to review all renewable energy development and transmission projects on public lands for potential visual and natural resource impacts.

Policies and Guidelines

a. Help identify previously disturbed and fragmented areas that may serve as new energy transmission corridors.

6.3.4 Management Objective

Promote conservation of energy used to support public lands facilities, operations, and transportation.

Policies and Guidelines

a. Work with public land management agencies to identify opportunities to conserve energy.

6.4 References

[1] Utah Department of Natural Resources, Oil, Gas, and Mining Division. 2013. Oil and Gas Wells, spatial data. https://gis.utah.gov/data/energy/oil-gas/

[2] Berry, Jason et.al. 2009. Utah Renewable Energy Zones Task Force Phase I Report, Utah Geological

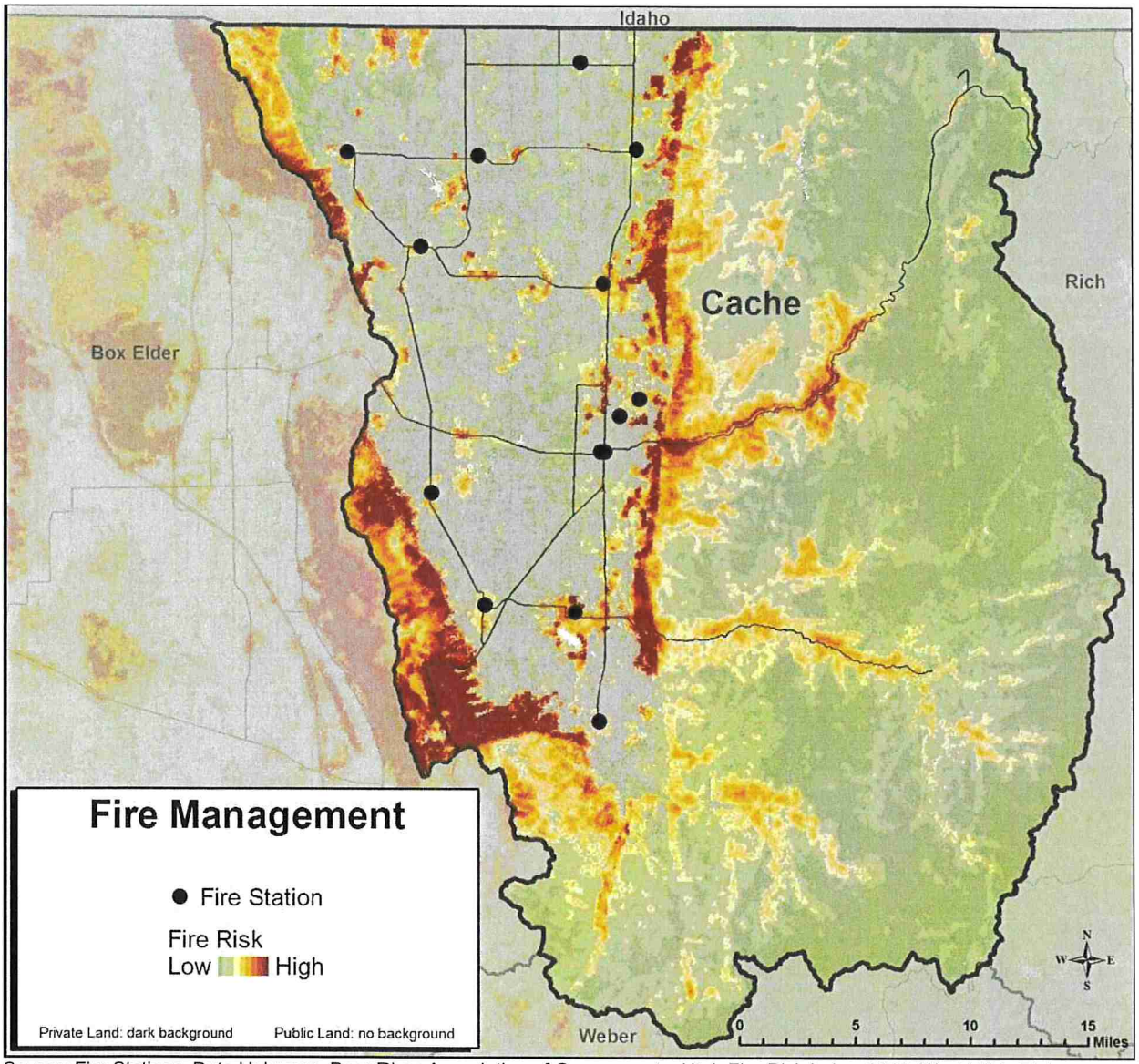
Survey, Department of Natural Resources. https://energy.utah.gov/wp-content/uploads/UREZ-Phase-I.pdf

7. FIRE MANAGEMENT

Fire management refers to the principles and actions to control, extinguish, use, or influence fire for the protection or enhancement of resources as it pertains to wildlands. It involves a multiple-objective approach strategy including ecosystem restoration, community preparedness, and wildfire response.

Related resources:

- Forest Management
- Noxious Weeds
- Air Quality



Source: Fire Stations, Date Unknown, Bear River Association of Governments. Utah Fire Risk Index, 2013, West Wide Risk Assessment, Utah Division of Forestry, Fire, and State Lands.

7.1 Management Setting

7.1.1 Context

Wildfire is the most prevalent disturbance to natural resources in the State of Utah. The threat of wildfire in Cache County is greatest on its public lands. The wildland-urban interface (i.e. the residential and developed areas bordering open space and public lands) surrounds the valley and is the area that contains development and infrastructure most at risk in the event of a wildfire on public lands. The wildland-urban interface requires its own unique fire management considerations because of the following factors: high density of structures both residences and outbuildings, higher density of utilities that could be impacted, more complex evacuations procedures, and concentrated air-quality issues and effects.

Fire suppression is expensive to taxpayers. With climate change and expected increase in temperatures and drought periods, fire-suppression costs are projected to rise. Effective fire management includes elements of wildfire prevention, mitigation, and preparedness.

7.1.2 Findings

The areas of Cache County with the highest risk for wildland fires tend to be in the foothills which are also the boundary between private and public lands (see Fire Management map). Wildland fire is an integral component of the county's forest, range, and desert lands and affects thousands of acres on an annual basis. Below is a compilation of Cache County wildland fire statistics over 100 acres in size since 2010 (Table 7.1).[1]

Table 7.1. Nationally reported wildland fires over 100 acres in size and acreage burned in Cache County since 2010.

YEAR	NUMBER OF FIRES	ACREAGE BURNED
2010	0	0
2011	0	0
2012	1	110
2013	2	3,150
2014	0	0
2015	0	0
2016	1	1,216

Source: Geospatial Multi-Agency Coordination Group (GeoMAC) fire perimeter data.

7.1.3 Legal Context

Response to fire incidents relies on proper oversight, guidance, and partnership among a variety of trained professional organizations. Establishing a fire management system is a critical step in protecting communities both urban and rural. Fire management refers to the principles and actions to control, extinguish, use, or influence fire for the protection or enhancement of resources as it pertains to wildlands. It involves a multiple-objective approach strategy including ecosystem restoration, community preparedness, and wildfire response.[2] Wildfires do not respect political boundaries, and cooperation among different agencies and jurisdictions covering federal, state, county, municipal, and rural/volunteer

fire departments is essential for successful fire management response. In Utah the state legislature tasked the Utah Division of Forestry, Fire, and State Lands to devise a Comprehensive Statewide Wildland Fire Prevention, Preparedness, and Suppression policy known as SB-56.[3] Under this plan a master cooperative wildland fire management and Stafford Disaster Relief and Emergency Assistance Act (42 USC §5187 et seq. [1988]) response agreement is signed each year between numerous federal land management agencies and the State of Utah for cooperation during wildland fire incidents that occur throughout the state.[4]

Utah Code §11-7-1(1) requires counties and municipalities to provide fire protection within their boundaries and coordinate with adjacent counties and public land management agencies to conduct fire suppression. Utah Code §65a-8-202(4) requires counties (not municipalities) to be responsible for cost of fire suppression.

Applicable state planning documents include the Utah Forest Action Plan by the Utah Division of Forestry, Fire, and State Lands.[5]

7.2 Desired Future State

Cache County supports controlled wildland fire use and prescribed fire on public lands to provide for ecosystem maintenance and restoration consistent with land uses and historic fire regimes where it does not threaten adjacent development. Cache County also supports hazardous fuel management to reduce risk of property damage and uncharacteristic fires, and the county supports fire suppression activities for public and firefighter safety and protection of other federal, state and private property and natural resources.

7.3 Management Objectives and Associated Policies and Guidelines

7.3.1 Management Objective

Return fire-dependent ecosystems to proper functioning and to reduce hazardous fuels.

Policies and Guidelines

a. Increase the active use of fire to return fire dependent ecosystems to proper functioning and to reduce hazardous fuels. [6]

b. Allow management of wildland fire to reduce fuel or accomplish other resource objectives when life and property are not at risk.

c. Coordinate prescribed fire[7] and controlled wildlands fire efforts with county, state and federal agencies.

7.3.2 Management Objective

Support wildland fire suppression when structures and lives are threatened

Policies and Guidelines

a. Develop comprehensive wildland fire emergency response plans and share them with the community.

b. Identify areas of high wildland fire hazard across the county.

c. Adopt wildland-urban interface (WUI) building ordinances to reduce fire risk.

d. Conduct proactive outreach among citizens occupying WUI on preparing for wildfire event.

e. Include municipal and volunteer fire departments in wildland fire training for quicker and additional fire response.

f. Utilize smoking and fire bans when fire danger conditions become hazardous.

g. Educate and inform the public when fire danger rises throughout a fire season.

h. Participate in the State Wildland Fire Suppression Fund.[8]

7.4 References

[1] National Interagency Fire Center. 2017. Historic Fire Perimeters, spatial data. https://rmgsc.cr.usgs.gov/outgoing/GeoMAC/ (accessed January 8, 2016).

[2] US Forest Service. 2016. Wildland Fire Touches Every Part of the Nation. Managing Wildland Fires. https://www.fs.fed.us/fire/management/index.html (accessed February 6, 2016).
[3] Utah Department of Natural Resources, Utah Division of Forestry, Fire, & State Lands. 2015. Utah Wildland Fire Policy. http://le.utah.gov/interim/2015/pdf/00005301.pdf (accessed February 2, 2016).

[4] Utah Department of Natural Resources, Utah Division of Forestry, Fire, & State Lands. 2013. Master Cooperative Wildland Fire Management and Stafford Act Response Agreement. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5409791.pdf (accessed February 2, 2016).

[5] Utah Department of Natural Resources, Utah Division of Forestry, Fire, & State Lands. 2016. Utah Forest Action Plan 2016. http://www.ffsl.utah.gov/images/forestry/stateassessment/UtahFAP-2016-HighRes-dnd.pdf (accessed March 24, 2017).

[6] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (Accessed March 23, 2017).

[7] Utah State University Extension. 2013. Utah Forest Facts. Prescribed Fire on Public Lands. NR/FF/025.

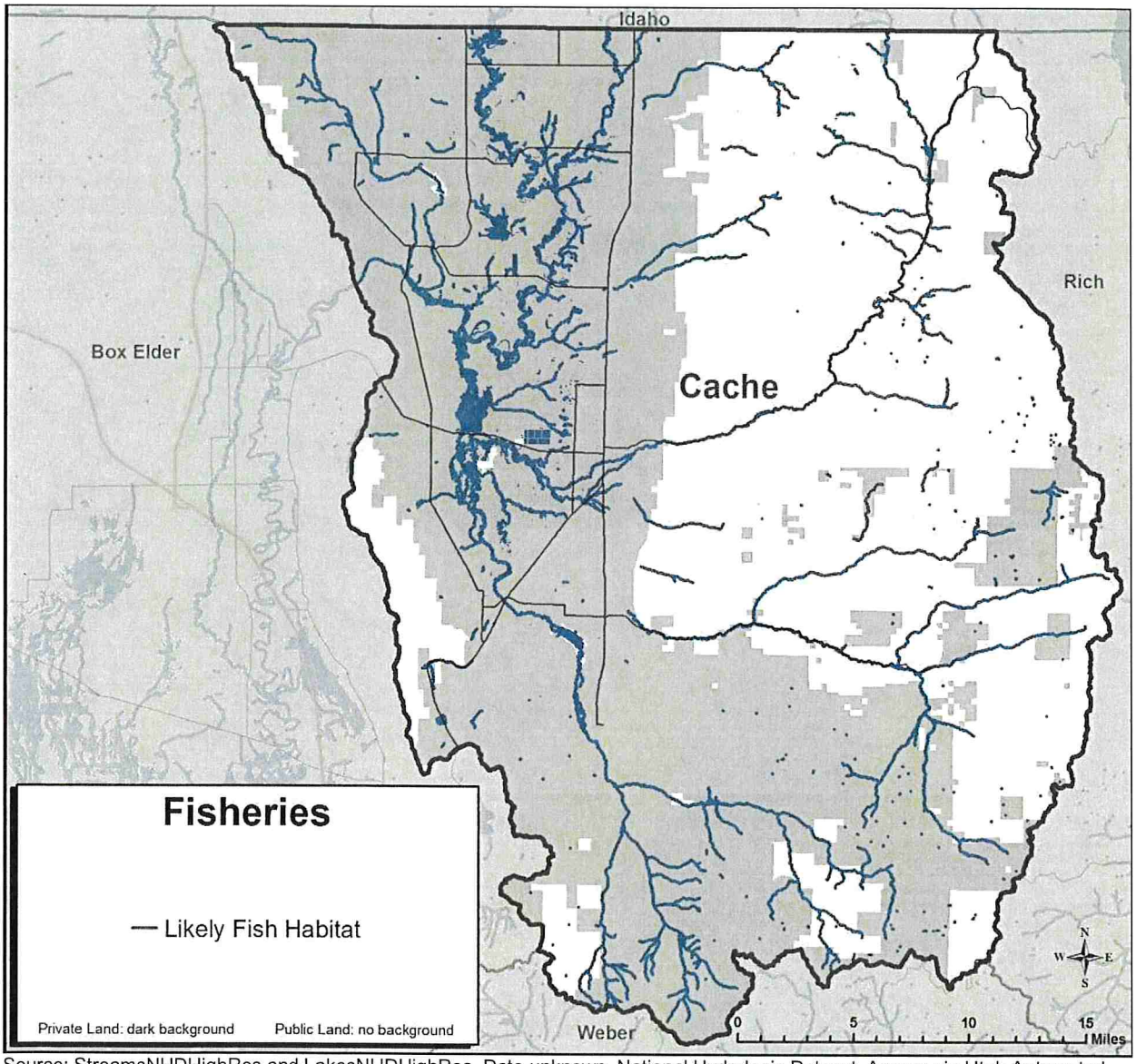
[8] Rule R652-121. Wildland Fire Suppression Fund, Utah Administrative Code.

8. FISHERIES

A fishery is an aquatic system that includes a target organism, a community of species on which that organism depends, the habitat in which they reside, and the humans that affect or utilize the resource within the ecosystem.

Related resources:

- Water Quality and Hydrology
- Threatened, Endangered, and Sensitive Species



Source: StreamsNHDHighRes and LakesNHDHighRes, Date unknown, National Hydrologic Dataset, Access via Utah Automated Geographic Reference Center.

8.1 Management Setting

8.1.1 Context

Fishing and fisheries provide education and introduction to natural resources and their management. Sport fishing has significant, positive economic impact in Cache County through retail and tourism.

Aquatic invasive species (AIS) are defined by the Utah Division of Wildlife Resources (DWR) as nonnative species of aquatic plants and animals that cause harm to natural systems or human infrastructure. Not all nonnative species are considered AIS, as many nonnative fish species are desirable for sport fishing. These may include nonnative rainbow trout, brown trout, bass, and catfish.

The primary AIS threats in Utah are related to *Dreissenid* spp. mussels, such as quagga mussel, zebra mussel, and dark false mussel. Invasive mussels in Utah waters have no natural competitors, and once they are established, they spread quickly, growing on nearly all underwater surfaces. The prolific mussels often clog water and power infrastructure, harm aquatic recreational equipment, and outcompete native species for nutrients, which can have profound effects on sportfish populations higher in the food chain.

8.1.2 Findings

The DWR is responsible for managing fisheries in Utah with a primary resource goal of providing quality recreational fishing opportunities.[1] Assisting the DWR in decision making and establishing management priorities are the state Wildlife Board and five Regional Advisory Councils (RACs) who provide local input on fishing related issues. Each RAC consists of a diverse group of interest group representatives, including agriculture, sportsmen, federal land agencies, general public, and elected officials. Meeting schedules and agendas can be found on the RAC website.[2]

Cache County is home to two Blue Ribbon Trout Fisheries; the Logan River from the source down to Third Dam and the Blacksmith Fork River from the source to the mouth of the canyon. Both are well known to anglers across the state for brown trout, Bonneville cutthroat trout, and whitefish.

Aquatic invasive species, especially *Dreissenid* spp., pose a significant threat to water bodies, water courses, and water infrastructure in Cache County. Once established in local waters they are nearly impossible to remove. Prevention is the most efficient method to combat this threat. The DWR operates boat inspection and decontamination certification at Hyrum Reservoir and monitors for *Dreissenid* at four water bodies in Cache County.

Dreissenid spp. have infested Lake Powell in southern Utah and possibly Deer Creek Reservoir in Wasatch County. On January 15, 2016, the DWR posted notice of the detection of quagga mussel veligers (juvenile mussels) in Deer Creek Reservoir.

Another threat to the salmonid fisheries in Cache County, especially rainbow trout, is whirling disease. Whirling disease is a parasitic infection that leads to cartilage and bone deformities in young fish causing them to whirl instead of swimming normally. Many fish with the disease die or are eaten by predators. The decaying bodies of dead fish and predator animal waste spreads spores which can further transmit whirling disease throughout the watershed. Anglers can also spread the parasite on contaminated fishing equipment, waders, and boats.

The following waters in Cache County have tested positive for the whirling disease parasite:[3]

- Hyrum Reservoir
- Little Bear River
- Logan River
- Blacksmith Fork River

8.1.3 Legal Context

All wildlife, including fish, are the property of the State of Utah and managed by the DWR.

Applicable Laws

Utah Code §23-13-3 provides that wildlife not held by private ownership is considered property of the state. Utah Code §23-15-2 establishes that the state has jurisdiction of all wildlife in the state, including aquatic wildlife, whether on public or private land. Utah Code §4-23-2 declares that preserving the wildlife resources of Utah is important to the economy of the state. Utah Code §23-14-2.6 establishes the organization and function of RACs, which advise the state Wildlife Board regarding wildlife management issues.

8.2 Desired Future State

Cache County desires to restore riparian and in-stream habitats (where degraded) to support native fish, sport fishing, and tourism. The county also desires to improve water quality and aquatic habitat for the same reasons. Cache County desires to prevent AIS from establishing in its waterways and work to remove them where they already occur on public lands. Cache County likewise desires to support public education efforts on the transmission and impacts of aquatic diseases and AIS and proper equipment cleaning protocols.

8.3 Management Objectives and Associated Policies and Guidelines

8.3.1 Management Objective

Maintain high-quality riparian and in-stream habitats on public lands that support native fish, sport fishing, and tourism. Work to restore habitat where degraded to improve fisheries.

Policies and Guidelines

a. Restore natural water and sediment flow regimes.

8.3.2 Management Objective

Support water quality best management practices on public lands to improve water quality and aquatic habitat, recognizing the need for sufficient water to maintain functioning aquatic ecosystems.

Policies and Guidelines

a. Reduce inappropriate grazing by domestic livestock and wildlife, including riparian and wetland areas.

b. Reduce inappropriate siting of roads in riparian zones and improve crossings where applicable for fish passage.

c. Increase cover and extent of native riparian vegetation by restoring beavers on the landscape in areas where social and environmental factors permit.

d. Support the removal of in-stream barriers where practical and the creation of selective fish passage structures around barriers that cannot be removed.[1]

e. Support the reduction in artificially channelized or straightened stream miles.

8.3.3 Management Objective

Prevent the spread of aquatic diseases and the establishment of AIS from all waterways and waterbodies in Cache County.

Policies and Guidelines

a. Support the Utah Aquatic Invasive Species Management Plan as it increases outreach efforts directed at public education.[4]

b. Support public education efforts on the transmission and impacts of aquatic diseases and of AIS and proper equipment cleaning protocols. Support efforts to educate the public on Utah's AIS decontamination protocols.[5]

8.4 References

[1] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah Wildlife Action Plan, Draft Version 6-4-2015. https://wildlife.utah.gov/wap/wap2015draft.pdf (accessed March 14, 2017).

[2] Utah Department of Natural Resources, Utah Division of Wildlife Resources, Wildlife Board & RACs, https://wildlife.utah.gov/board-rac.html.

[3] Utah Department of Natural Resources, Utah Division of Wildlife Resources, Whirling Disease. https://wildlife.utah.gov/fishing/whirlingdisease.html (accessed May 24, 2017).

[4] Utah Department of Natural Resources, Utah Division of Wildlife Resources, Utah Aquatic Invasive Species Task Force. 2009. Utah Aquatic Invasive Species Management Plan, Publication No. 08-34.

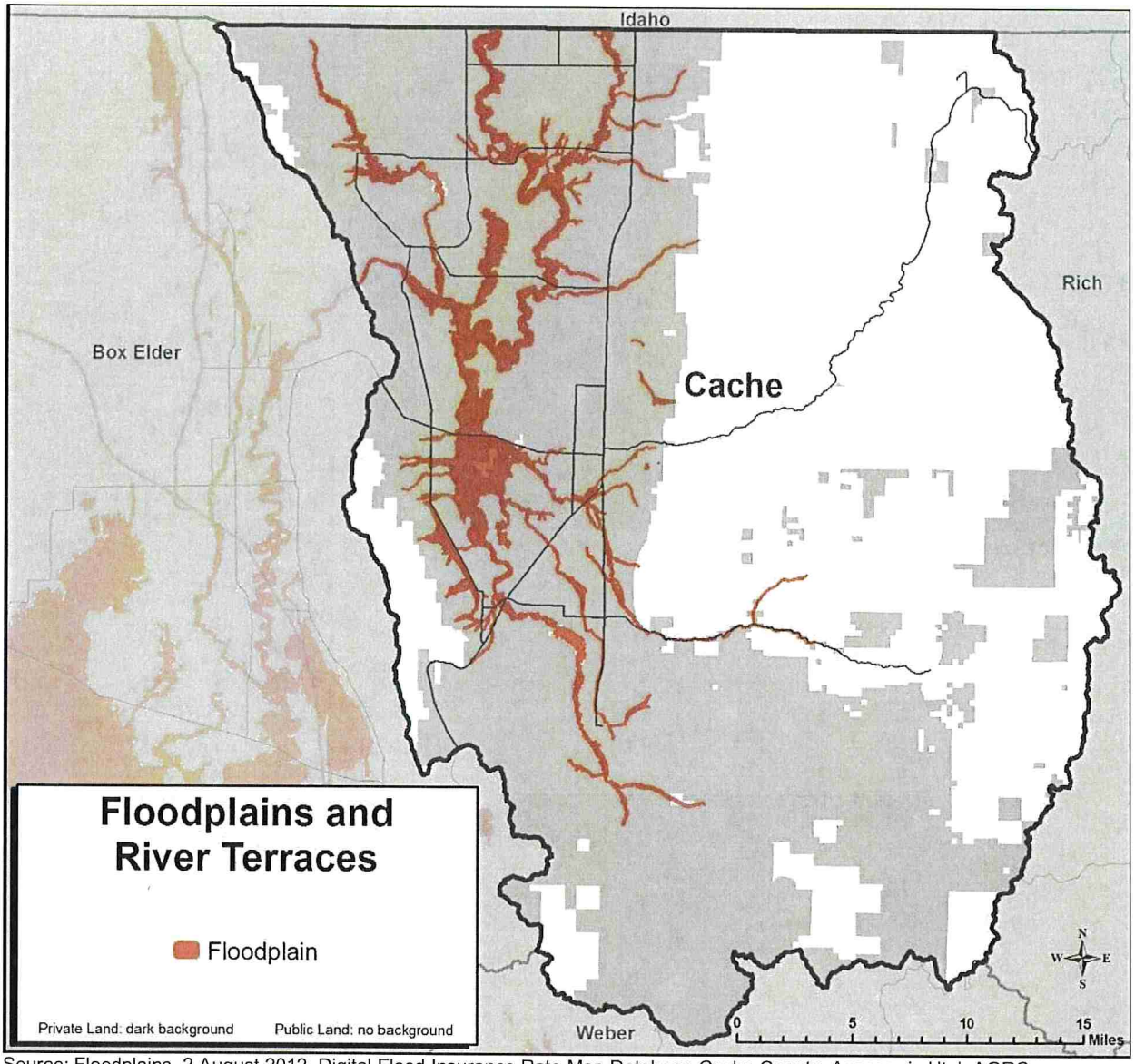
[5] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2012. Utah Decontamination Protocols, Revised 4-18-12. https://wildlife.utah.gov/mussels/PDF/decon_protocol.pdf (accessed April 11, 2017).

9. FLOODPLAINS AND RIVER TERRACES

Floodplains are the low-lying, flood-prone areas adjacent to a river. River terraces are the bench or stepped areas that extend along river valleys. River terraces usually represent former levels and paths of floodplains of a stream or river. Rivers are dynamic systems. They can migrate laterally as a result of bank erosion and deposition, and move vertically as a result of bed aggradation or degradation. Floodplains and terraces are formed during these channel migration processes. Therefore, floodplains and terraces are essentials parts of the river system.

Related resources:

- Riparian Areas
- Wetlands
- Water Quality and Hydrology
- Irrigation



Source: Floodplains, 2 August 2012, Digital Flood Insurance Rate Map Database Cache County, Access via Utah AGRC.

9.1 Management Setting

9.1.1 Context

Floodplains and terraces are an integral part of the hydrologic and ecological system supporting water quality and habitat. Rivers and water courses originating on public lands within Cache County contribute to the Bear River in the center of the Valley. Many of these water courses have historic river terraces and floodplains located on private lands, which are outside the scope of this plan.

9.1.2 Findings

Floods occur when the river channel reaches its maximum capacity and water overflows streambanks into nearby areas that would otherwise be dry. Floods are caused by heavy rains or snowmelt delivering water at a rate faster than the soils can absorb it, or when a dam, landslide, or other impoundment gives way and

rapidly releases large amounts of water. For the most part, flooding is a natural process that contributes to channel maintenance, ecological processes, and riparian vegetation. Natural flooding usually occurs during peak flows or periods of high-water discharge.[1] Nevertheless, floods can cause severe impacts to public and private property and therefore must be mitigated.

The Federal Emergency Management Agency (FEMA) provides flood data that classifies areas based on flood hazards mapped through the National Flood Hazard Layer (NFHL). This enables community officials, emergency responders, and the public to be informed and plan accordingly to avoid or reduce impacts from floods. The FEMA and NFHL also guide development and reduce risk by excluding flood hazard areas. The NFHL maps the probability of flooding at specific areas using historical data and prediction models. Floodplains are classified based on the probability of a specific flood event happening in that area. For example, a 100-year floodplain means that a flood event that can inundate the specific area has a probability of happening once in 100 years. This does not mean that the area would be inundated once every 100 years; a 100-year floodplain can be inundated 2 years in a row. Rather, this means that every year there would be a 1% probability of a 100-year flood happening in that area (Table 9.1).

Table 9.1. Mapped acreage of Cache County in 100-year floodplain (generally not mapped by FEMA on public lands).

FLOOD ZONE	ACRES
100-year flood zone	27,690

Source: Federal Emergency Management Agency National Flood Hazard Layer.

9.1.3 Legal Context

Applicable Laws

Executive Order 11988 Floodplain Management (1977) as summarized on the FEMA website instructs Federal Agencies to do the following:[2]

- Assert leadership in reducing flood losses and losses to environmental values served by floodplains.
- Avoid actions located in or adversely affecting floodplains unless there is no practicable alternative.
- Take action to mitigate losses if avoidance is not practicable.
- Establish a process for flood hazard evaluation based upon the 100-year base flood standard of the National Flood Insurance Program.

The Executive Order also directs federal agencies to issue implementing procedures, provides a consultation mechanism for developing the implementing procedures, and provides oversight mechanisms.

Utah Code §17-27a-401-2-e (County) and 10-9a-401-2-e (Municipal) require general plans to "promote health, safety, and welfare" through the protection of urban development. State statutes allow local jurisdictions to address geologic hazards through zoning districts and ordinance to regulate land used in floodplains and potential geologic hazard areas (Utah Code §17-27a-505-1-c (County) and 10-9a-505-1-c (Municipal).

Utah Code §73-3-29-1 requires all state, county, municipal or private landowner to acquire a permit from the state engineer to "relocate any natural stream channel or alter the beds and banks of any natural stream without first obtaining the written approval of the state engineer." Among other purposes, this law is designed to prevent stream alteration which might "unreasonably or unnecessarily diminish the natural channel's ability to conduct high flows."

9.2 Desired Future State

Cache County desires to promote a healthy hydrological system which encourages efficient flood control and water conveyance, while providing clean water, wildlife habitat, and recreational uses.

9.3 Management Objectives and Associated Policies and Guidelines

9.3.1 Management Objective

Protect life and property from the increased risk of flooding.

Policies and Guidelines

a. Develop stream setbacks, use FEMA Floodplain Management Requirements[3] for administering and enforcing local floodplain management regulations, and carefully review development plans along streams and at the mouths of drainages.

9.3.2 Management Objective

Promote healthy hydrological system including aquatic habitat and riparian vegetation.

Policies and Guidelines

a. Promote management actions within floodplains and wetlands that include measures to preserve, protect, and if necessary, restore them to their natural functions.

9.4 References

[1] Jordan River Commission. 2013. Best Practices for Riverfront Communities. http://jordanrivercommission.com/wp-content/uploads/BP-high-res-for-web.pdf (accessed March 23, 2017).

[2] Federal Emergency Management Agency. ND. Executive Order 11988. https://www.fema.gov/executive-order-11988 (accessed March 23, 2017).

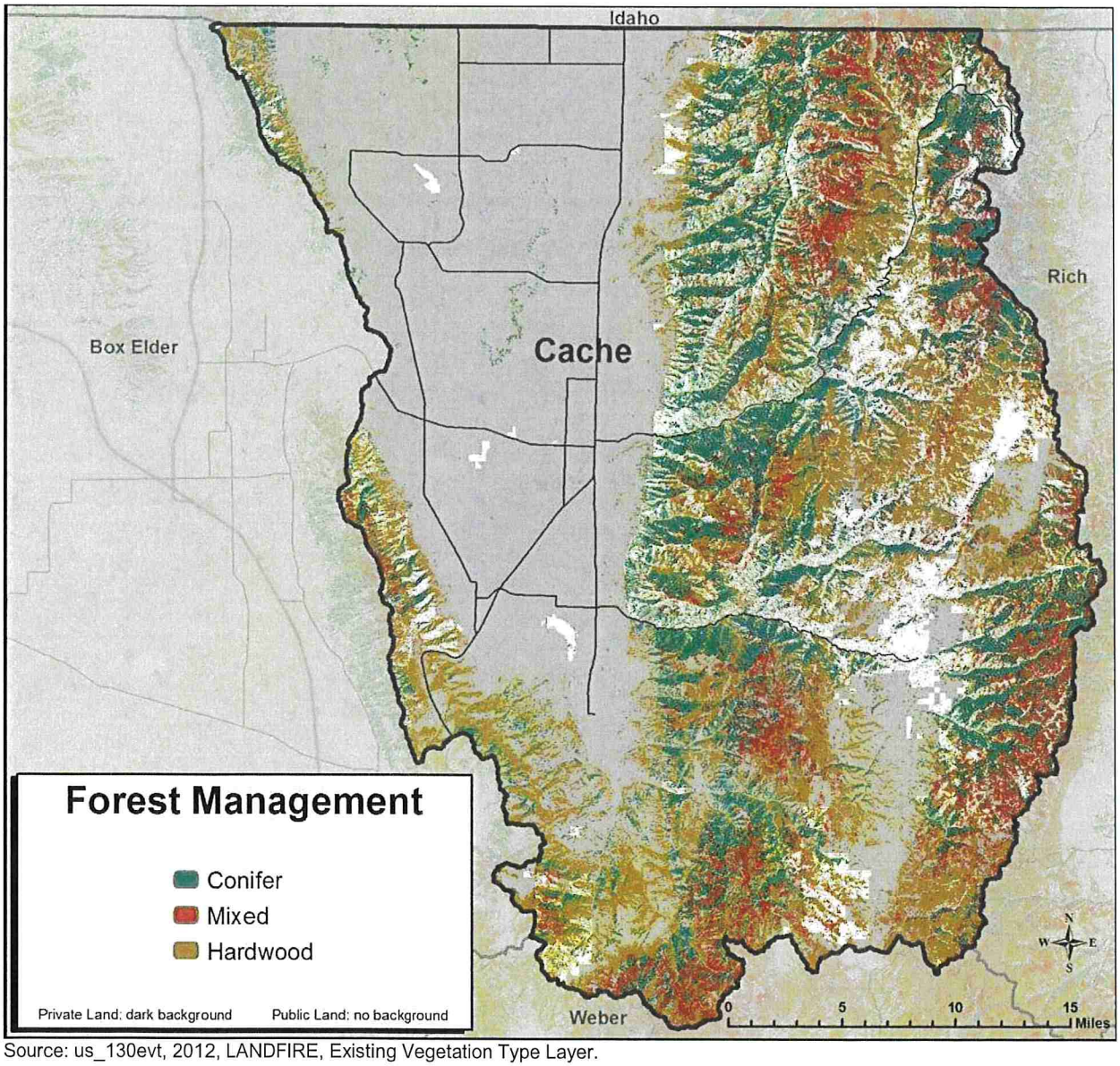
[3] FEMA, Floodplain Management Requirements. https://www.fema.gov/floodplain-management-requirements (accessed April 26,2017).

10. FOREST MANAGEMENT

Forest management consists of the principles and actions for the regeneration, use, and conservation of forests. Forests, woodlands, and urban forests add to the quality of life of residents and visitors to Cache County.

Related resources:

- Fire Management
- Noxious Weeds



Source: us_130evt, 2012, LANDFIRE, Existing Vegetation Type Layer.

10.1 Management Setting

10.1.1 Context

The US Forest Service manages the forests within the Uinta-Wasatch-Cache National Forest. The Utah Division of Forestry, Fire, and State Lands provides forest management expertise to state agencies and private landowners.

Proper forest management can benefit water quality, wildlife habitat, recreation, aesthetics, and the forest's resilience. Temperature and precipitation levels in the west will alter the forest and its composition.

10.1.2 Findings

Table 10.1 shows forested types by area and landowner in Cache County.

Table 10.1. Acres of vegetation types in Cache County by landowner.

FORESTED VEGETATION TYPE	FEDERAL (ACRES)	STATE (ACRES)	PRIVATE (ACRES)	Totals
Conifer	84,914 (32%)	6,837 (20%)	29,447 (16%)	121,198 (25%)
Conifer-Hardwood	37,936 (14%)	3,001 (9%)	17,135 (9%)	58,072 (12%)
Hardwood	80,409 (30%)	9,165 (27%)	65,766 (36%)	155,340 (32%)
Shrubland	61,588 (23%)	14,797 (44%)	71,424 (39%)	147,809 (31%)
Totals	264,847 (100%)	33,800 (100%)	183,772 (100%)	482,419 (100%)

Source: US Geological Survey, Landfire Existing Vegetation Type, 2012.

10.1.3 Legal Context

Management of forest vegetation on US Forest Service and US Bureau of Land Management lands follows standard land use planning procedures defined in National Forest Management Act (16 USC §1600 et seq. [1976]), National Environmental Policy Act (42 USC §4321 et seq. [1969]), and Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]). Refer to Section 12, Land Use, for more information regarding land use decision-making procedures.

10.2 Desired Future State

Cache County desires to maintain and improve forest health to reduce threat of catastrophic wildfire and for the benefit of water quality, wildlife habitat, recreation, aesthetics, and the forest's resilience.

10.3 Management Objectives and Associated Policies and Guidelines

10.3.1 Management Objective

Maintain resilient forest vegetation capable of adapting to change utilizing vegetation treatments, prescribed fire, and other management techniques.

Policies and Guidelines

a. Protect forest health challenged by change, invasive species, insects, disease, and increasing public use.

b. Support hazardous fuel reduction projects through prescribed fire, silvicultural and mechanical treatments.[1]

10.4 References

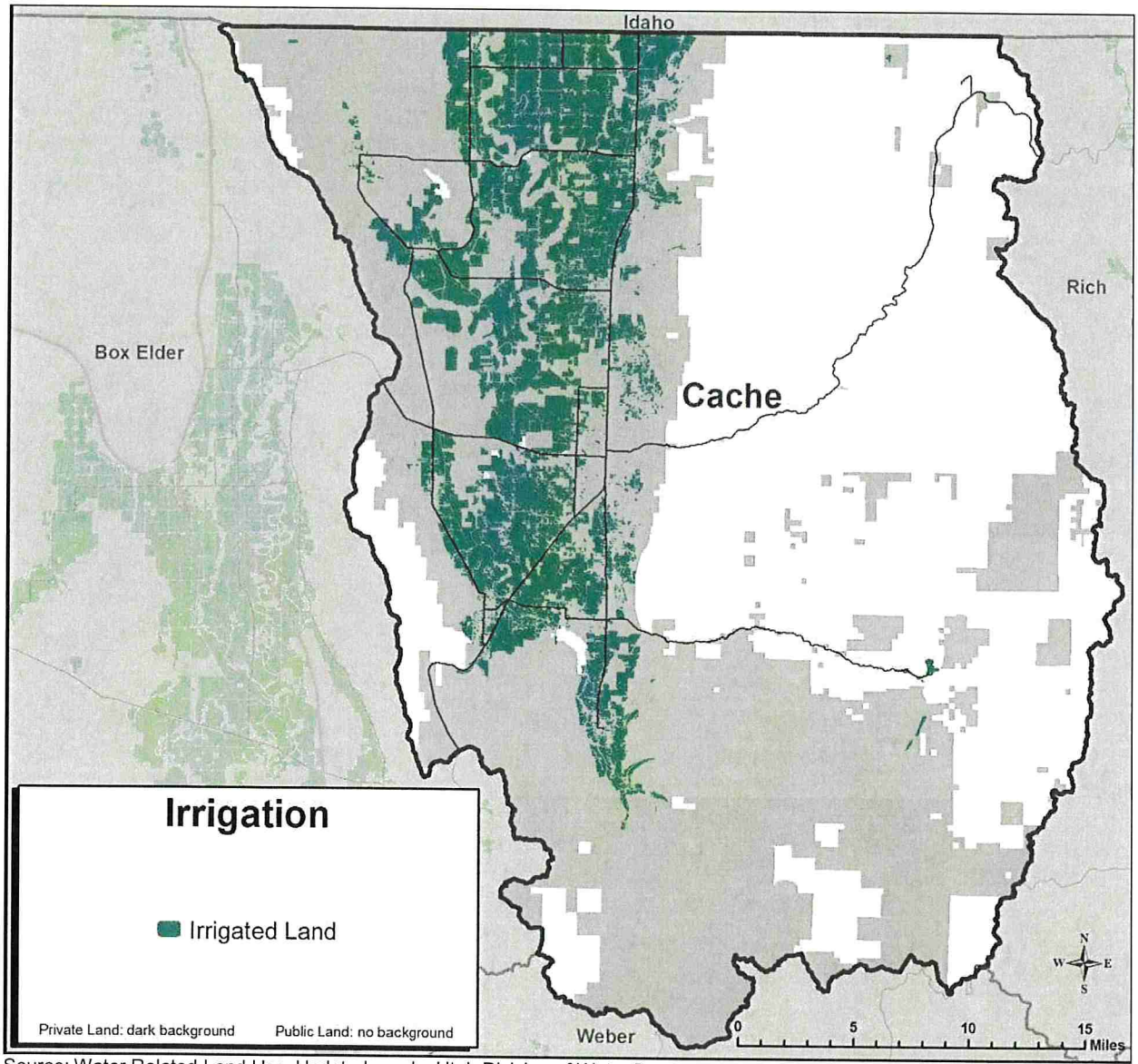
[1] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (Accessed March 23, 2017).

11. IRRIGATION

Irrigation is the practice of supplemental application of water to land beyond that directly received from precipitation. Irrigation expands agricultural output of cropland and sustains additional vegetation growth throughout the landscape. Irrigation, as a resource, is not mentioned in public land plans for Cache County.

Related resources:

- Agriculture
- Ditches and Canals
- Water Rights



Source: Water Related Land Use, Updated yearly, Utah Division of Water Resources, Access via Utah Automated Geographic Reference Center.

11.1 Management Setting

11.1.1 Context

Cache County's public lands serve as the water source supplying most irrigation systems in the valley. Irrigation systems are an integral element for agricultural viability in Cache County. The use, upgrade, and maintenance of the county's network of canals, ditches, and dams continues today. Many of the canals and ditches remain open, but over time some have been lined or piped to improve operational efficiency and for safety reasons.

11.1.2 Findings

Based on analysis of the Water Related Land Use data published by the Division of Water Resources, Cache County has 94,716 acres of irrigated land[1], the vast majority on private lands. The county also has over 90 irrigation or canal companies. Table 11.1 lists the 15 canals companies with the most miles of canals in the county.

Table 11.1. Canal companies with at least 10 miles of canals in Cache County.

COMPANY	FEDERAL (MILES)	STATE (MILES)	PRIVATE (MILES)	TOTAL MILES
Smithfield Irrigation Company	0	0	123.1	123.1
Logan North West Field Irrigation Company	0	0	46.2	46.2
West Cache Irrigation Company	0	0	42.8	42.8
Spring Creek Water Company (Providence)	11.9	2.1	26.4	40.4
Newton Water Users Association	0	0	34.5	34.9
Cub River Irrigation Company	0	0	33.6	33.6
Cache Highline Water Association	0.9	0	30.2	31.1
Nibley Blacksmith Fork Irrigation Company	0	0	29.1	29.1
Providence Blacksmith Fork Irrigation Company	0	0	27.5	27.5
Wellsville Mendon Conservancy District (Canal)	0.1	0	22.1	22.2
Richmond Irrigation Company	0	0.2	20.4	20.6
Hyrum Blacksmith Fork Irrigation Company	0	0	19.2	19.2
Benson Irrigation Company	0	0	18.2	18.2
Hyrum Irrigation Company	0	0	13.8	13.8

Porcupine Highline Canal Company	0	1.3	12.2	13.6
Providence Logan Irrigation Company	0	0	12.7	12.7
Spring Creek	0	0.4	10.3	10.7
Millville Irrigation Company	0	0.1	10.3	10.4
All Other Named Canals (76)	0.7	3.1	230.4	234.2
Total Named Canals (94)	13.6	7.2	763.0	783.8

Source: Cache County Canal Dataset.

11.1.3 Legal Context

Within each watershed, various entities or individuals have legal claims (i.e., water rights) to use the water for "beneficial use" and are permitted to divert waters from streams into reservoirs, canals, and pipelines. The distribution of water is governed by state law and is based largely on geographic proximity, available supply, and ownership of the water rights. Applicable laws include those found in Utah Code §73 (Water and Irrigation).

11.2 Desired Future State

Cache County desires to protect its watersheds, water quality, and water quantity for the benefit of irrigation users downstream from public lands.

11.3 Management Objectives and Associated Policies and Guidelines

11.3.1 Management Objective

Support water quality and land management best management practices for the benefit of water quality and water supply for the benefit of water users downstream.

Policies and Guidelines

a. Coordinate with federal and state agencies to promote watershed and water quality protection.

11.3.2 Management Objective

Reduce impacts to natural resources from water conveyance infrastructure.

Policies and Guidelines

a. Support public education efforts about the transmission and impacts of aquatic diseases and of aquatic invasive species and proper equipment cleaning protocols.

b. Support the removal of in-stream barriers where practical and the creation of selective fish passage structures around barriers which cannot be removed.

11.4 References

[1] Utah Division of Water Resources. 2016. Water Related Land Use, spatial data. Downloaded April

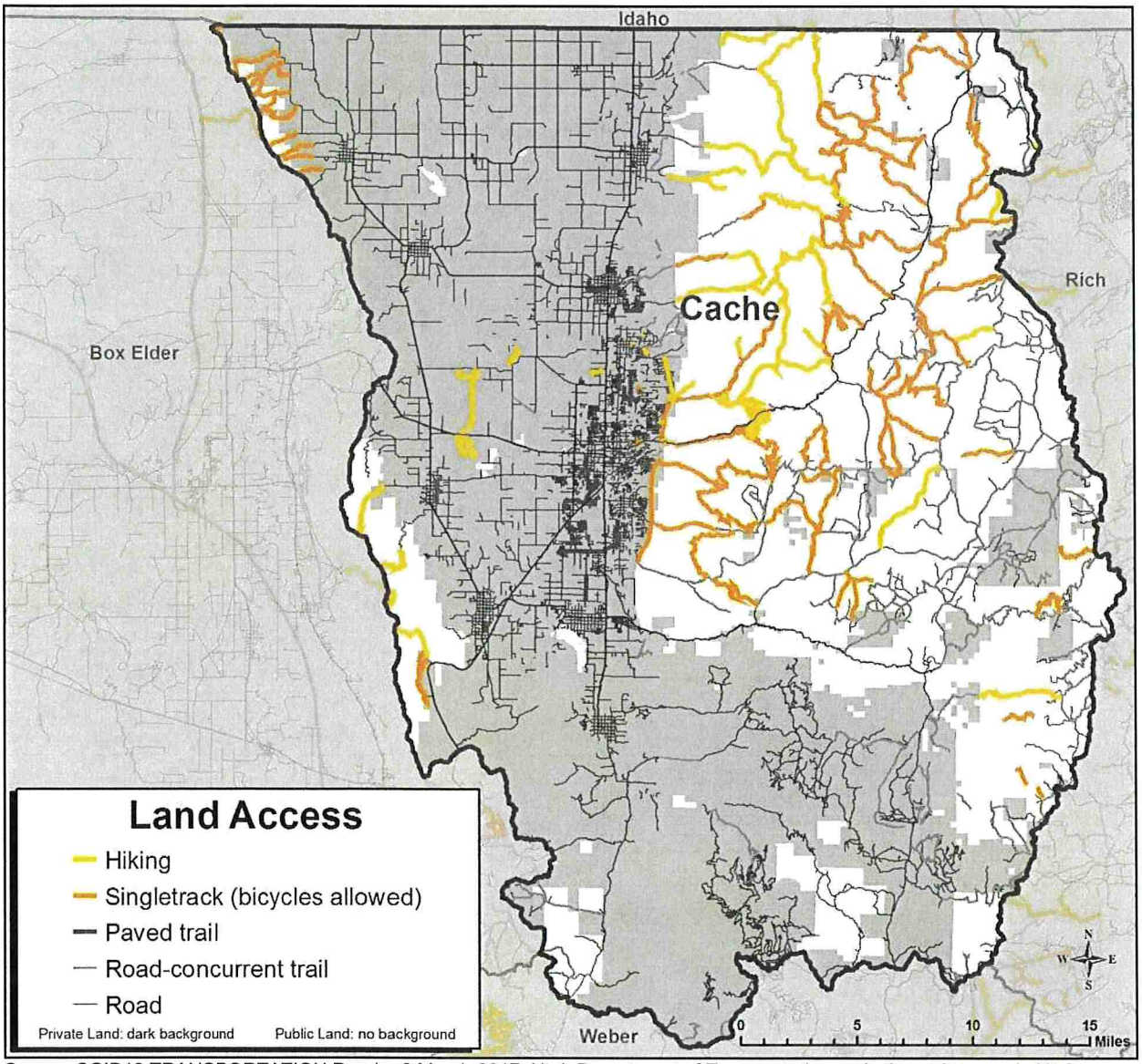
2017.

12. LAND ACCESS

Land access refers to the ability to physically and legally access a given parcel of land. This typically has to do with roads, rights-of-way (ROWs) and property inholdings. Land access also concerns administrative restrictions on the methods or timing of land access, such as motorized vs. non-motorized access, and access that may be restricted at certain times. Finally, access can also refer to crossing or visiting lands via trails or other non-motorized methods. Common land access issues include private land surrounded by federal lands, private lands within designated wilderness areas, lands within federal lands owned by the Utah School and Institutional Trust Lands Administration, and public lands accessed by crossing private property.

Related resources:

- Land Use
- Wilderness



Source: SGID10.TRANSPORTATION.Roads, 9 March 2017, Utah Department of Transportation and others, Access via Utah

Automated Geographic Reference Center.

12.1 Management Setting

12.1.1 Context

Land access refers to the ability to physically and legally access a given parcel of land. In Cache County access typically has to do with public roads and ROWs across private property in order to access public lands.

Land access also concerns administrative restrictions on the methods or timing of land access, such as motorized vs. non-motorized access, and access that may be restricted at certain times of the year.

12.1.2 Findings

Cache County has a responsibility to facilitate land access regardless of land ownership. This is accomplished by acquiring and maintaining ROWs or easements across properties that are not public. The county can acquire and enforce access to its public lands by properly participating in planning processes that involve federal agencies, state agencies, and other stakeholders. Litigation is sometimes a part of land-access issues.

12.1.3 Legal Context

Gaining or maintaining access to lands is typically accomplished through ROWs or easements across another landowner's property. The process is different for each type of landowner, and each may have specific administrative procedures, management objectives, and historical context.

Applicable Laws

US Forest Service (Forest Service). Rights-of-way on Forest Service lands are managed through planning documents and procedures established by the National Forest Management Act (16 USC §1600 et seq. [1976]) and the National Environmental Policy Act (42 USC §4321 et seq. [1969]) processes.

US Bureau of Land Management (BLM). The BLM manages ROWs through Resource Management Plans developed through procedures established by the Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]) and the National Environmental Policy Act (42 USC §4321 et seq. [1969]) processes.

R.S. 2477. Prior to the Federal Land Policy and Management Act, ROWs on BLM and Forest Service lands were enabled by Revised Statute 2477 (Section 8 of the Mining Act of 1866) and are generally considered to be available for accessing property within and across public lands.[1]

Private Property. Just as access to private inholdings among federal lands is important, so too is providing access to public lands through private property. Cache County has an obligation to ensure the ROWs with historic access across private lands remain open. Additionally, as urban development continues, Cache County should facilitate new public access to public lands by purchasing easements across private property where appropriate.

Cache County can establish new ROWs through private lands in three ways. First, for developing lands, the county can identify ROWs in the transportation component of the General Plan. With ROWs identified, the county can work with developers to construct and maintain ROWs as the land develops over time. Second, the county can guide willing landowners to negotiate mutually beneficial solutions to purchase public ROWs or easements across private property. Finally, in cases where landowners do not

want a public ROW or easement across their property, counties can use the doctrine of eminent domain.

State law enables the right of eminent domain to condemn private property for roadways for public vehicles but not for recreational uses (Utah Code §78B-6-501-3e).

12.2 Desired Future State

Cache County desires to pursue the most appropriate and feasible means of securing legal public access while mitigating conflicts on privately owned lands and fragmentation of public lands. The county desires seasonal protection of roads to preserve infrastructure investment.

12.3 Management Objectives and Associated Policies and Guidelines

12.3.1 Management Objective

Encourage preservation of access to public lands, understanding that access does not necessarily imply motorized access.

Policies and Guidelines

a. Prioritize and support access to public lands and waterbodies over private land.

b. Pursue the most appropriate and feasible means of securing legal public access to public lands while mitigating conflicts on privately owned lands.

c. Work with private land operators to prevent and reduce trespass issues arising from public roads through private property.

12.3.2 Management Objective

Continue seasonal road closures to preserve infrastructure investment.

Policies and Guidelines

a. Maintain and promote cooperative relationships with the Forest Service to facilitate open dialog regarding timing and location of seasonal road closures.

12.4 References

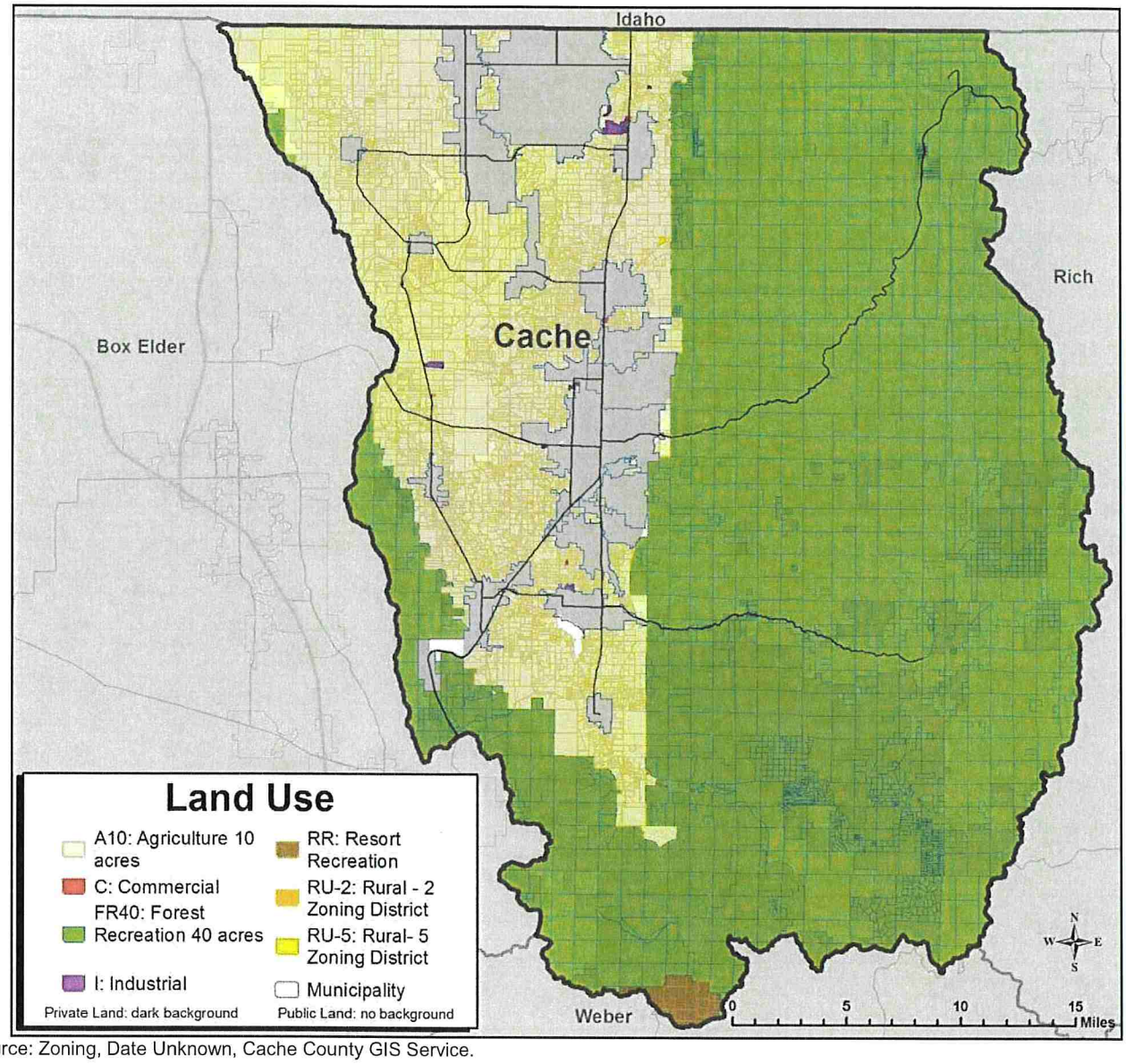
[1] Utah's Public Lands Policy Coordinating Office. ND. R.S. 2477 Roads. Website http://publiclands.utah.gov/rs-2477-roads/ (accessed March 29, 2017).

13. LAND USE

Land use refers to allowable uses for land and resources given many competing demands. Land use decisions are made by public land managers to establish priorities for various resources among the many competing desires and potential uses for those resources. The best land use decisions are made through planning procedures that consider a range of options and provide opportunities for input from a diverse range of affected stakeholders. Land use decisions are made by federal, state, tribal, and local governments, which have jurisdiction over the lands following planning procedures outlined in federal and state statutes, though this is not the case for some federal and state properties, which are managed for specific purposes, such as the US Fish and Wildlife Service or Utah School and Institutional Trust Lands.

Related resources:

- Mining
- Land Access
- Wilderness



Source: Zoning, Date Unknown, Cache County GIS Service.

13.1 Management Setting

13.1.1 Context

Public lands in Cache County serve as critical drinking water sources, important wildlife habitat, pasture for livestock, and frequently utilized recreational areas to name a few. Land use decisions are made by land managers to establish priorities for various resources among the many competing desires and potential uses for those resources. The best land use decisions are made through planning procedures that consider a range of options and provide opportunities for input from a diverse range of affected stakeholders. Land use decisions are made by federal, state, and local governments, which have jurisdiction over the lands following planning procedures outlined in federal and state statutes.

13.1.2 Findings

Ownership of these lands is a complex pattern comprised of federal, state, and private lands. A summary of land ownership by category and area is provided in Table 13.1. Over half of Cache County (66%) is zoned as Forest Recreation (See Table13.2 and Land Use map).

Table 13.1. Land ownership type and acreage within Cache County.

OWNERSHIP CATEGORY	LAND OWNERSHIP TYPE OR ENTITY	ACRES	PERCENTAGE
Federal	US Forest Service	285,644	38.1
Federal	US Bureau of Reclamation	354	
Federal	US Bureau of Land Management	131	
State	Utah Division of Wildlife Resources	20,348	5.1
State	Utah State and Institutional Trust Lands	16,997	
State	Utah Division of State Parks	676	
State	Utah Department of Transportation	4	
Private	Private	425,899	56.8
Totals		750,053	100

Source: Spatial analysis of the Utah School and Institutional Trust Lands (SITLA) Land Ownership GIS Layer.

Table 13.2. Zoning Base Districts within Cache County.

ZONING	DESCRIPTION	ACRES
A10	Agriculture 10 acres	180,170 (24%)
C	Commercial	148 (<1%)
City	City, Municipality	64,058 (9%)
FR40	Forest Recreation 40 acres	491,468 (66%)
I	Industrial	547 (<1%)
RR	Resort Recreation	3,536 (<1%)
RU2	Rural 2	118 (<1%)
RU5	Rural 5	77 (<1%)
Unknown	Unknown	9,931 (1%)
Total		750,053 (100%)

Source: Cache County Zoning Base Districts GIS Layer.

13.1.3 Legal Context

Private Property

Private lands are regulated by land use ordinances and zoning districts approved by local and county governments. Zoning districts, and the regulations established within the zoning districts, are authorized by Utah Code §17-27a-505 and municipalities §10-9a-505. Land use ordinance and zoning maps are legislative decisions and established through planning processes open to public discussion and voted on by county and city councils.

In 2015 and 2016 the Utah State Legislature amended county general plan requirements to include a resource management component, for which this document was written. Utah Code §17-27a-401 compels counties to assess 28 natural resource categories occurring on public lands within their boundaries and set goals and objectives for each resource. Resource management plans provide federal land managers with local land use plans that they may consider in the planning processes of public lands.

US Forest Service (Forest Service)

The Forest Service manages land use decisions by developing land and resource management plans, also known as Forest Plans, under the National Forest Management Act (16 USC §1600 et seq. [1976]). Subsection 1604(a) requires the US Forest Service to "coordinate with the land and resource management planning processes of State and local governments and other Federal agencies" during development and revision of Forest Plans. Forest Plans also require consideration of alternatives and public input under National Environmental Policy Act (42 USC §4321 et seq. [1969]), also known as NEPA. This provides an open planning process to assist land managers in understanding stakeholders' desires for various land uses and identify potential impacts of those uses.

Current applicable Forest Service planning documents include the 2003 Revised Forest Plan and Final Environmental Impact Statement for the Wasatch-Cache National Forest.[1]

Other Applicable Land Use Laws

- Wilderness Act: 16 USC §1131 (1964)
- Wild and Scenic Rivers Act: 16 USC §1271 et seq. (1968)
- Utah Wilderness Act: Public Law 98-428 (1984)
- Utah Code: §63J-8-103 (State participation in managing public lands)
- Utah Code: §63J-8-104 (State land use planning and management program)

13.2 Desired Future State

Cache County desires to provide recreation options on public lands to meet the high demand for recreational activities on the forest. This should be accomplished while striving to balance the needs for clean water, protection of private property rights on private lands, fire prevention and suppression, and other economic benefits provided by public lands.

Cache County desires that federal land management agencies (specifically, the Forest Service), cooperate, to the fullest extent, possible with county goals and objectives for resource management as spelled out in the National Forest Management Act, Federal Land and Policy Management Act, and National Environmental Policy Act. It is the county's position that local concerns and interests should be acknowledged and addressed by public land management agencies prior to decisions being made and implemented. Land use designations must also be sensitive to the site-specific natural resource and landscape context to minimize impacts.

13.3 Management Objectives and Associated Policies and Guidelines

13.3.1 Management Objective

Maintain and improve communication and coordination among various federal, state, local land use authorities, user groups, and other stakeholders with a vested interest in public lands in Cache County.

Policies and Guidelines

- Encourage and participate in coordination and communication among various public land stakeholders. Where appropriate, the county will enter into reciprocal agreements to require notification of planning decisions made by each entity and to provide an opportunity for comments.

- Actively participate and coordinate with agency managers and decision makers.

- Acknowledge and address local concerns by public land management agencies prior to decisions being made and implemented.

13.3.2 Management Objective

Land uses on public lands should prioritize resource protection and environmental stewardship over resource development. Cache County supports a balance of restrictive land use designations with other less restrictive uses, including motorized recreation opportunities and consumptive uses like grazing, when resource impacts can be mitigated or avoided.

Policies and Guidelines

a. Balance resource development with resource protection and environmental stewardship.

13.3.3 Management Objective

Ensure that adjacent land uses and land use restrictions do not deny private property owners the right of fair use, access to, and enjoyment of their property. Ensure land uses on private property do not deny public access to and enjoyment of public lands.

Policies and Guidelines

a. Participate in land management planning activities to ensure that land use restrictions do not deny private property owners the rights of fair use, access to, and enjoyment of their property.

13.3.4 Management Objective

Develop and support diverse recreation opportunities on public lands, provide facilities and maintenance necessary to support those opportunities, and (when possible) separate conflicting user groups.

Policies and Guidelines

a. Engage stakeholders early and often during Forest Plan revisions as well as during project level planning.

13.4 References

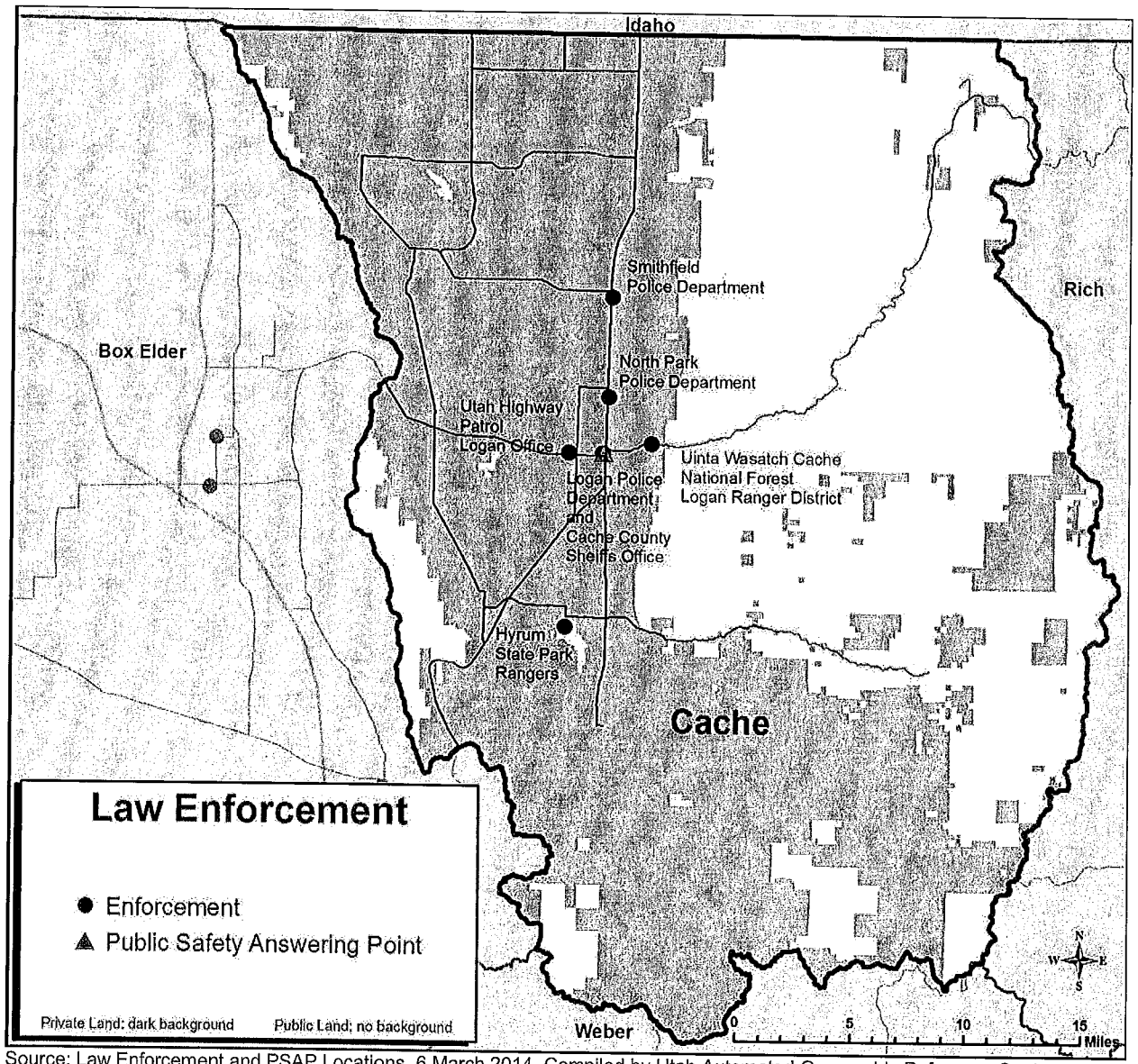
[1] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (accessed March 23, 2017).

14. LAW ENFORCEMENT

Law enforcement is concerned with the specific, and sometimes overlapping, jurisdictions of law enforcement, response personnel, and emergency management across a county. County planning has generally not addressed law enforcement goals or policies. In the context of resource management planning, appropriate goals might address public safety, property protection, and interagency coordination.

Related resources:

- Economic Considerations
- Fire Management



Source: Law Enforcement and PSAP Locations, 6 March 2014, Compiled by Utah Automated Geographic Reference Center.

14.1 Management Setting

14.1.1 Context

Key law enforcement issues related to natural resources management and public lands are coordination among jurisdictions of various law enforcement personnel and funding issues such as funding for search-and-rescue operations. Law enforcement plays a critical role in protecting natural resources from misuse and theft, managing off-highway vehicles, and in search-and-rescue operations.

14.1.2 Findings

Coordination occurs among several jurisdictions with some form of law enforcement on public lands in Cache County. This includes the US Forest Service, Utah Department of Wildlife Resources Resource Conservation Officers, Utah Division of Forestry Fire and State Lands, Utah State Park Rangers, Utah Highway Patrol, county sheriff, and local law enforcement.

14.1.3 Legal Context

Federal and state law enables shared law enforcement duties on public lands.

Applicable Laws

The Federal Land Policy Management Act (43 USC §1701 et seq. [1976]) and Utah Public Safety Code (Utah Code: §53-13-106 et seq.) allows county sheriffs to enter into agreements with federal agencies to share law enforcement duties such that all parties can enforce federal, state, and local laws.

14.2 Desired Future State

Cache County desires for coordinated law enforcement to continue to play a critical role in the maintenance of law and order on public lands to protect the health and safety of persons using public lands, including rule and regulation enforcement, private property trespass, search and rescue operations, and law enforcement.

14.3 Management Objectives and Associated Policies and Guidelines

14.3.1 Management Objective

Coordination among local law enforcement officials, including county sheriff, state and federal officials, maintain law and order on public lands to protect the health and safety of persons using those areas.

Policies and Guidelines

a. Maintain law and order on public lands, control litter, discourage vandalism, protect cultural resources, monitor off-highway vehicle use, and perform search-and-rescue operations as needed.

b. Notify the county sheriff's office immediately when there are life-threatening situations, criminal activity, structure failure, resource contamination, natural phenomenon (e.g., fire, landslides), cultural resource site(s) disturbance, and/or discovery of human remains.

c. Share and coordinate search-and-rescue operations, regulation enforcement, and trespass issues between federal agencies and state, county, and local law enforcement units.

d. Promote communication/interaction between the groups.

14.3.2 Management Objective

Effective interagency law enforcement between federal and state agencies and various levels of law enforcement.

Policies and Guidelines

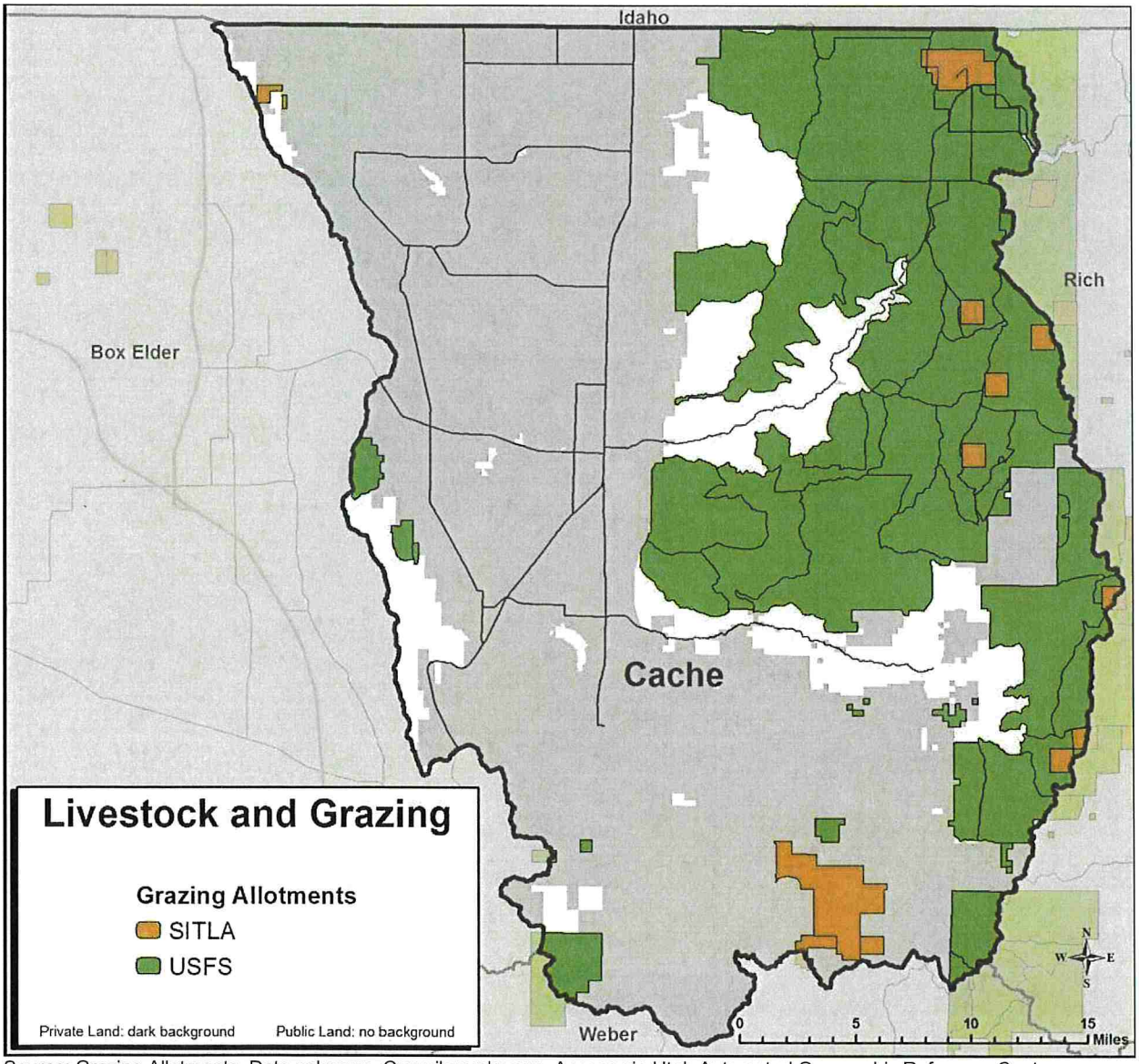
a. Share and coordinate information, policies, procedures, etc., between federal agencies and state, county, and local law enforcement units.

15. LIVESTOCK AND GRAZING

Livestock includes domestic animals, such as sheep, cattle, and horses that are raised for commercial and private use. Grazing refers to feeding livestock on growing grass, pasturage, or rangeland. Public and private lands in Cache County are used for livestock grazing.

Related resources:

- Agriculture
- Irrigation
- Predator Control



Source: Grazing Allotments, Date unknown, Compiler unknown, Access via Utah Automated Geographic Reference Center.

15.1 Management Setting

15.1.1 Context

Raising livestock is a substantial component of the economy of Cache County. For 2012 approximately 74% ($105.3 million) of the market value of farm products sold from Cache Valley came from livestock and poultry, with crops accounting for 26%.[1] Many of the county's livestock operators rely on summer grazing on public lands.

The Blacksmith Fork and North Cache Conservation Districts of the Natural Resources Conservation Service identified Grazing and Range Management as two of five natural resource priorities for Cache County because 60% of the county is used for grazing and range vegetation has significantly changed.[2]

15.1.2 Findings

Grazing allotments cover a large portion of US Forest Service (Forest Service), and Utah School and Institutional Trust Lands in Cache County. Table 15.1 provides an overview of acreage by land manager.

Table 15.1. Grazing allotments and acreage by land manager.

MANAGING AGENCY	NUMBER OF ALLOTMENTS	ACRES
US Forest Service	56	232,862
Utah School and Institutional Trust Lands Administration	15	15,330
Totals	71	248,192

Source: Grazing Allotments, Date unknown, Compiler unknown, Access via Utah Automated Geographic Reference Center.

15.1.3 Legal Context

The Forest Service manages grazing in Cache County based on guidance specified in the Forest Plans following procedures established under the National Forest Management Act (16 USC §1600 et seq. [1976]) and the National Environmental Policy Act (42 USC §4321 et seq. [1969]).

15.2 Desired Future State

Cache County desires for its rural communities to have healthy economies, a portion of which includes livestock operations dependent on access to public lands for grazing.

Cache County desires grazing permit holders to be required to implement measures to help maintain, healthy, diverse aquatic and wildlife species, and to maintain or improve water quality.

15.3 Management Objectives and Associated Policies and Guidelines

15.3.1 Management Objective

Balance livestock grazing on public lands with the needs of resource conservation and recreation.

Policies and Guidelines

- Use the US Forest Service's standards of maximum forage utilization for rangelands in satisfactory condition. Tables 15.2 and 15.3 show the percent utilization and stubble height standards by vegetation types. [3]

Table 15.2. Grazing percent utilization standards.

VEGETATION TYPE	CONDITION	UTILIZATION GRASS or GRASS LIKE
Upland and Aspen	Satisfactory	50%
Crested Wheatgrass	Satisfactory	60%
Riparian Class I (away from greenline)	Satisfactory	50%
Riparian Class II & III (away from greenline)	Satisfactory	60%

Source: Wasatch-Cache National Forest Revised Plan, February 2003.

Table 15.3. Grazing riparian greenline stubble height standards.

RIPARIAN CLASS	CONDITION	STUBBLE HEIGHT END OF SEASON
Riparian Class I	Satisfactory	No Less Than 5"
Riparian Class II	Satisfactory	No Less Than 4"
Riparian Class III	Satisfactory	No Less Than 3"

Source: Wasatch-Cache National Forest Revised Plan, February 2003.

15.3.2 Management Objective

Support efforts that require permit holders to implement measures that keep livestock out of streams, lakes or other waterways.

Policies and Guidelines

a. Support education efforts and provide technical assistance regarding grazing best management practices on forest lands, and especially in sensitive areas such as riparian areas. [4,5]

15.4 References

[1] USDA: National Agricultural Statistics Services. 2012. County Summary Highlights. https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Utah/st49_2_001_001.pdf (accessed March 23, 2017).

[2] USDA, Natural Resource Conservation Service. Cache County Resource Assessment. September 2011.

[3] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (accessed May 26, 2017).

[4] Pratt, Mindy and G.A. Rasmussen. 2001. Determining Your Stocking Rate, Utah State University Extension. https://extension.usu.edu/rangelands/files/uploads/General%20Grazing%20Management/Determine%20Stocking%20rate.pdf (accessed March 29, 2017).

[5] Rinehart, Lee. 2008. Pasture, Rangeland and Grazing Management, ATTRA. https://extension.usu.edu/rangelands/files/uploads/General%20Grazing%20Management/Pasture%20Range%20Grazing%20Management.pdf (accessed March 29, 2017).

[6] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah Wildlife Action Plan, Draft Version 6-4-2015. https://wildlife.utah.gov/wap/wap2015draft.pdf (accessed March 14, 2017).

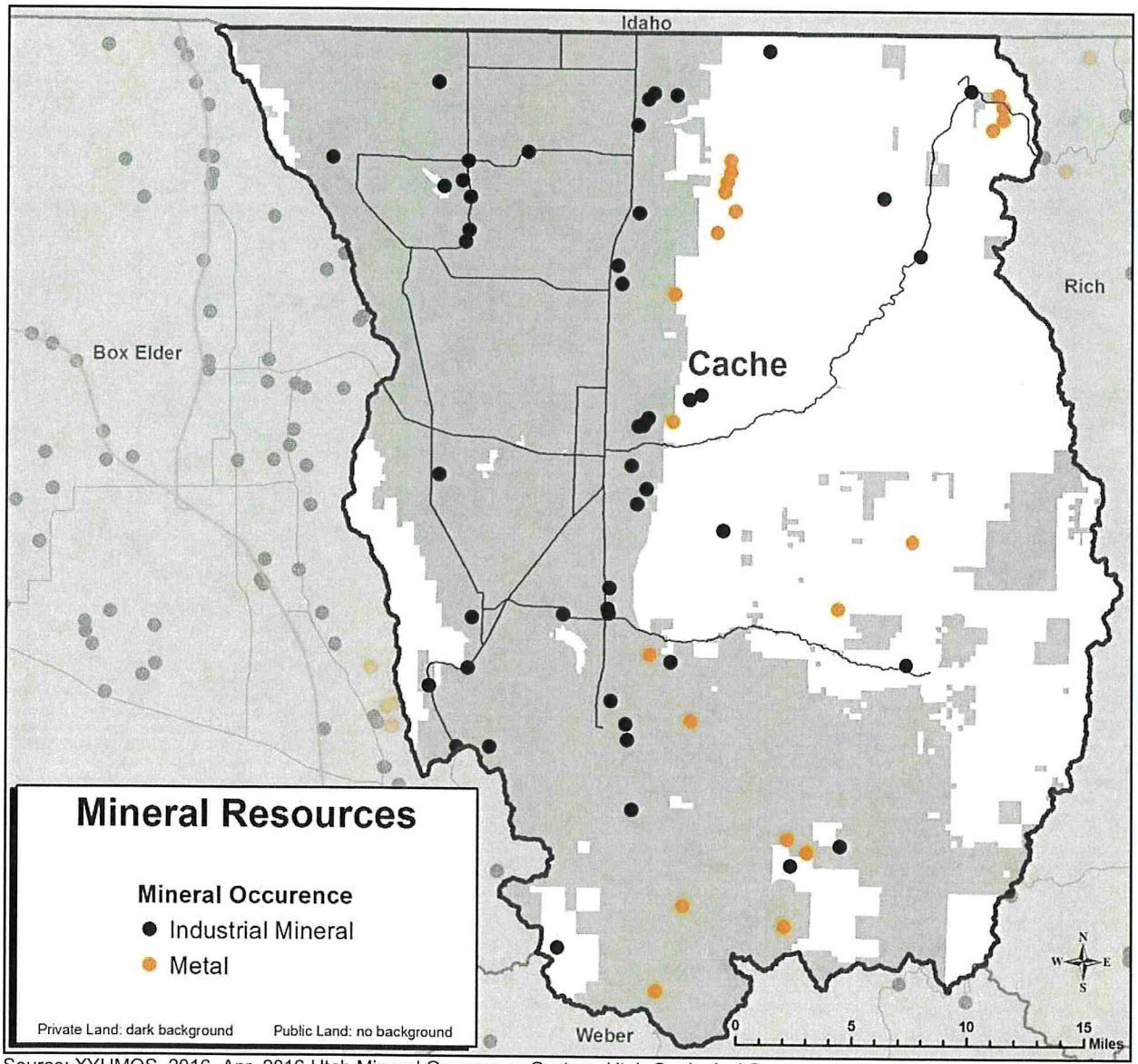
[7] Bellows, Barbara. 2003. Managed Grazing in Riparian Areas. Appropriate Technology Transfer for Rural Areas. https://extension.usu.edu/rangelands/files/uploads/General%20Grazing%20Management/Riparian%20grazing.pdf. Accessed 14 March 2017.

16. MINERAL RESOURCES

Mineral resources are known for potential geologic deposits of materials that are useful in industrial processes. Mineral development (mining) is regulated and managed depending on the extracted resource, and are grouped into three categories: locatable, leasable, and saleable.

Related resources:

- Mining
- Energy Resources



Source: XYUMOS_2016_Apr, 2016 Utah Mineral Occurrence System, Utah Geological Survey.

16.1 Management Setting

16.1.1 Context

Locatable minerals are high-value ores and elements such as gold, silver and copper. The extraction of locatable surface and subsurface mineral deposits on public lands is regulated by both the federal and state governments. Salable minerals include sand, gravel, and other aggregate, the extraction of which is regulated by Cache County. Information regarding the regulation and management of mineral development is available in this document under Section 17, Mining. Leasable minerals include oil, gas, coal, and other extracted energy sources, description and discussion of which are found in this document in Section 6, Energy Resources.

16.1.2 Findings

Economically viable mineral resources in Cache County are limited to salable minerals including sand, gravel, other aggregate, and stone. Locatable and leasable minerals, while present (see Mineral Resources map), are not currently being extracted.

16.1.3 Legal Context

Applicable Laws

Federal and state laws regulating the development, extraction, and reclamation are presented in Section 17, Mining, and Section 6, Energy Resources. Land Use, Section 12, provides procedural information for land use planning and methods to establish goals and objectives for mineral resources on public lands.

16.2 Desired Future State

Cache County supports mineral development on public lands only where impacts to water quality, air quality, wildlife, and habitat can be mitigated. Where future mineral resource extraction opportunities exist on public lands, Cache County desires to review them on a case-by-case basis.

16.3 Management Objectives and Associated Policies and Guidelines

16.3.1 Management Objective

Participate in land use decisions and planning procedures related to mining activities on public lands.

Policies and Guidelines

a. Coordinate with federal agencies in land use decisions and project planning related to mining and mineral activities.

16.3.2 Management Objective

Ensure mitigation of negative effects of mineral operations.

Policies and Guidelines

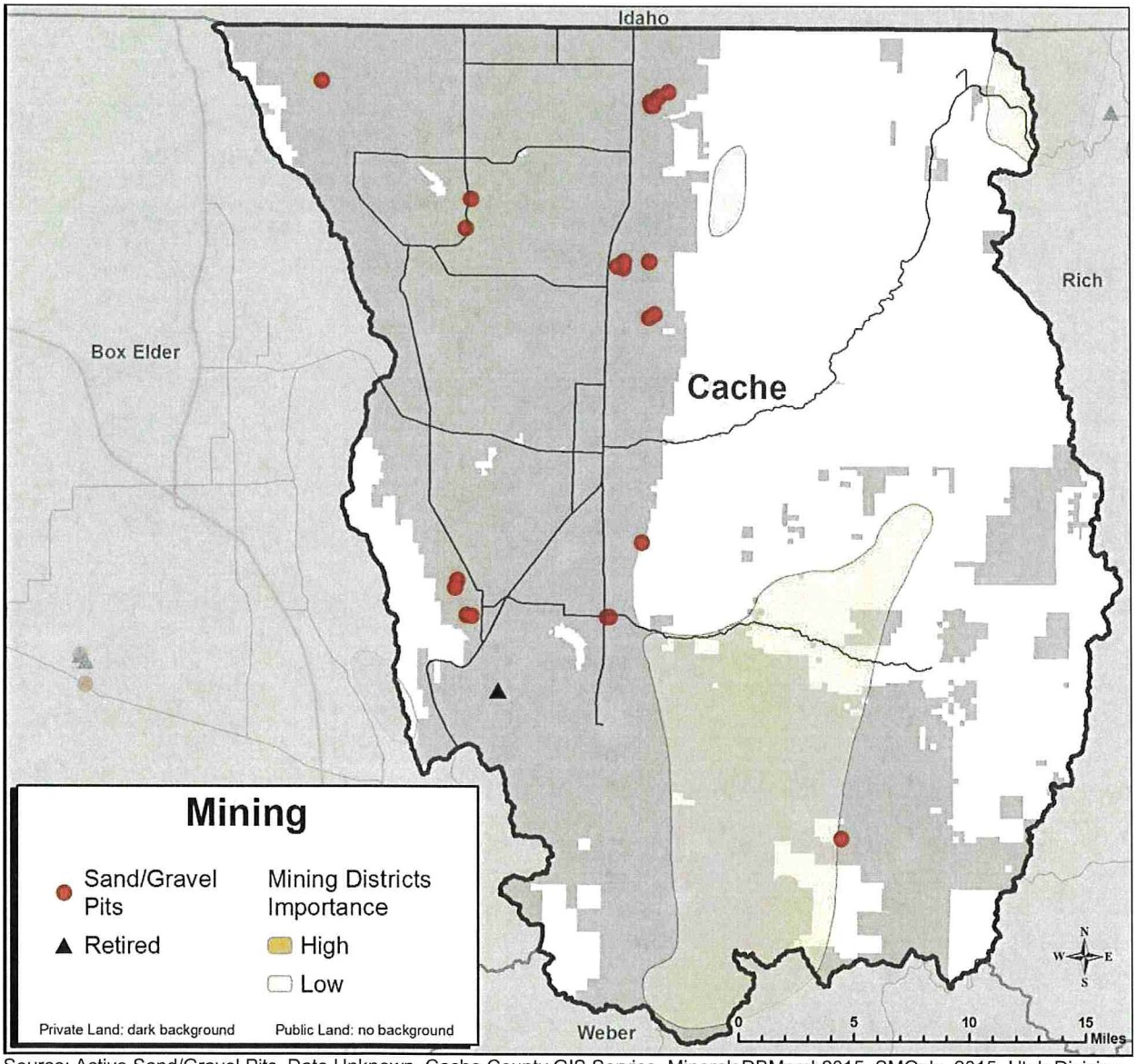
a. Work with Utah Division of Oil Gas and Mining and US Department of Interior on new mines in the county.

17. MINING

Mining refers to the process and industry of obtaining mineral and geothermal resources from a mine, well, or other extractive activity or operation. Mining operations are regulated and managed depending on the extracted resource, and are grouped into three categories: locatable, leasable, and saleable.

Related resources:

- Energy Resources
- Mineral Resources



Source: Active Sand/Gravel Pits, Date Unknown, Cache County GIS Service. MineralsDBMarch2015_SMOnly, 2015, Utah Division of Oil, Gas, and Mining. Utah_Mining_Districts, Date unknown, Utah Geological Survey.

17.1 Management Setting

17.1.1 Context

Locatable minerals are high-value ores and elements such as gold, silver and copper. The extraction of locatable surface and subsurface mineral deposits on public lands is regulated by both the federal and state governments. The extraction of salable minerals, including sand, gravel, and other stone, are regulated under public land use planning procedures. Development of salable minerals on private lands is regulated by the county under zoning ordinance.

17.1.2 Findings

Table 17.1 shows active and retired mines within Cache County by land ownership. The table reveals that mining is not currently a part of public land use in the county.

Table 17.1. Active and retired mines in Cache County by land ownership type.

MINE TYPE	FEDERAL	STATE	PRIVATE
Active mineral	0	0	23 (gravel and rock aggregate)
Retired mineral	0	0	1 (fractured rock for rip-rap)

Source: Combined Dataset. Active Sand/Gravel Pits, Date Unknown, Cache County GIS Service. Utah Division of Oil, Gas, and Minerals; MineralsDBMarch2015_SMOnly

17.1.3 Legal Context

The General Mining Law of May 10, 1872, as amended (30 USC §§22-54 and §§611-615) is the major federal law governing locatable minerals on public lands. In addition to defining procedures for discovery and patenting of certain minerals on federal lands, the law allows states to enact legislation regulating mining and reclamation activities. Federal regulations implementing the General Mining Law are found at 43 USC in Groups 3700 and 3800.[1]

In Cache County, the US Forest Service (Forest Service) manages surface mining with guidance from its Forest Plan written under the National Forest Management Act (16 USC §1600 et seq. [1976]) and the National Environmental Policy Act (42 USC §4321 et seq. [1969]). The US Bureau of Land Management (BLM) manages surface minerals within its authority based on guidance from the Resource Management Plan written under the Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]). The BLM also manages subsurface mining on Forest Service lands that are open to new mining claims. Some Forest Service lands are closed to new subsurface mines, including wilderness areas or lands within a Wild and Scenic River designation or study area.

The State of Utah has primacy on regulation and reclamation of mining activities on all lands within the state, and the Utah Legislature is assigned responsibility for administration of mining to the Utah Department of Oil, Gas and Mining (DOGM) (Utah Code §40-6-4).

For regulation of mineral ore mining, the DOGM administers permitting, inspection, and enforcement procedures under the Utah Mined Land Reclamation Act (Utah Code §40-7-8). All large mining operations within the state are required to have an approved notice of intention with the Minerals Program prior to beginning operations. Mining operations are broken up into the three categories: (1) large mine, (2) small mine, and (3) exploration under the Minerals Rules. The DOGM maintains a permit database of active and reclaimed mine sites.

17.2 Desired Future State

Cache County supports Utah's mining heritage and desires to maintain a cooperative relationship with existing mining operations, while encouraging environmental stewardship during active mining and reclamation at the close of each operation.

Cache County desires to have active participation in new mineral extraction decision making on public lands and to minimize the impacts of mining to the extent possible.

17.3 Management Objectives and Associated Policies and Guidelines

17.3.1 Management Objective

Ensure that all mining activities have clear and sensible reclamation plans and oversight, including mitigation, infrastructure upgrade, and maintenance plans for public roadways, as approved by the county.

Policies and Guidelines

a. Require strong reclamation plans and oversight that include infrastructure maintenance for public roadways.

b. Prior to mining activities, an engineering study must be commissioned by the mining entity and developed by an independent engineering firm. The engineering study should identify any impacts the proposed mining operation will have on the mining site and adjacent land areas, not limited to the following: roads, groundwater, air quality, ecology, and any public or private infrastructure.

c. A mitigation agreement may include a bond to address reparations resulting from the above-mentioned impacts and to ensure road repair and site reclamation.

17.3.2 Management Objective

Maintain a cooperative relationship with existing mining operations, while encouraging environmental stewardship during active mining and reclamation at the close of each operation.

Policies and Guidelines

a. The county will coordinate with Forest Service, BLM, DOGM, and Utah Division of Forestry Fire and State Lands on all planning activities and should be notified and consulted for new mining operations.

b. Key and iconic geologic features should be preserved from mining and other development.

17.4 References

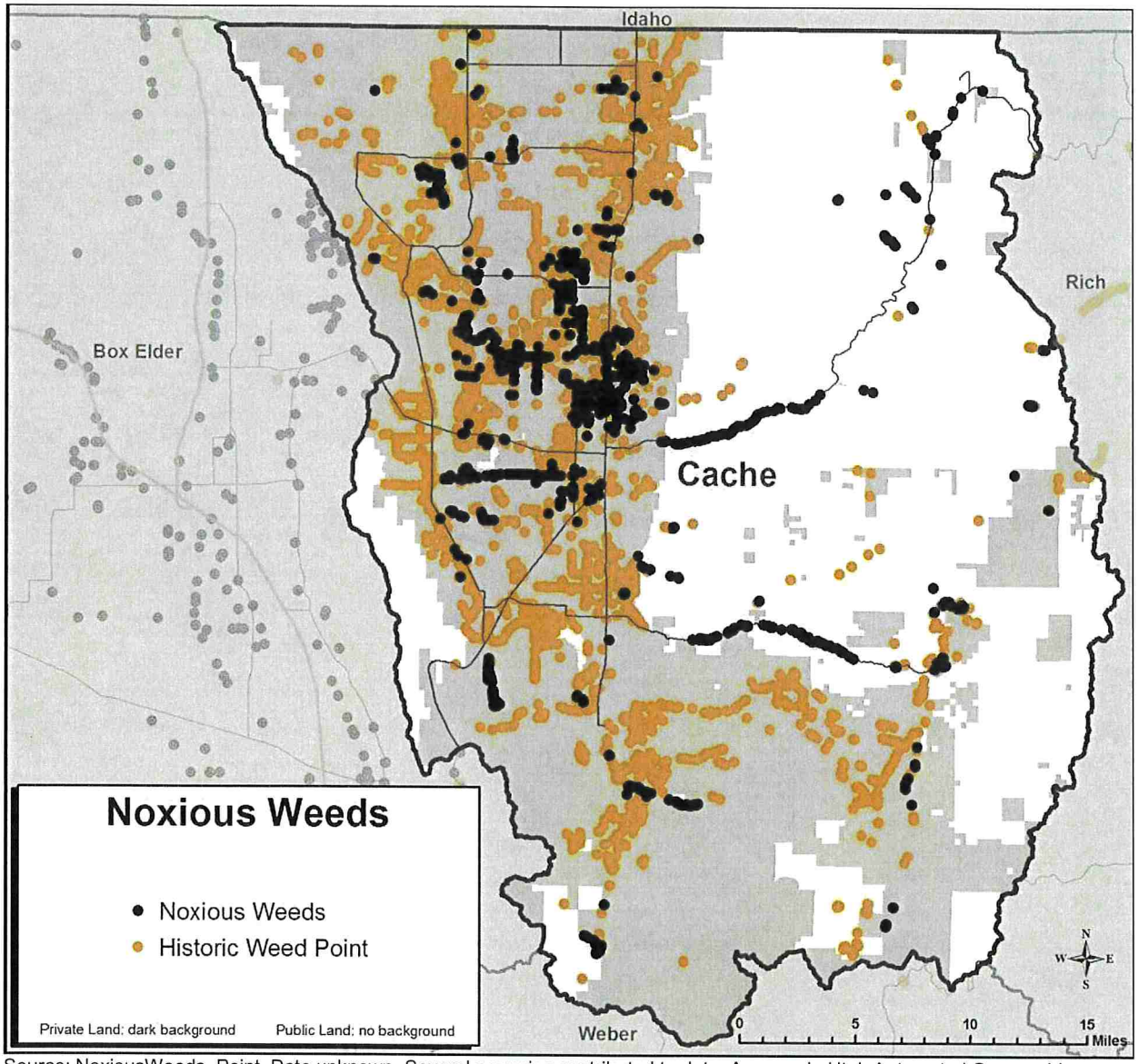
[1] US Department of Interior, Bureau of Land Management. 2011. Mining Claims and Sites on Federal Lands. BLM National Science and Technology Center. P-048.

18. NOXIOUS WEEDS

Noxious and invasive weeds are plants considered harmful to livestock, agriculture, and wildlife, or that otherwise negatively impact the landscape (e.g., increased wildfire threat, reduced biodiversity). They are typically (but not always) nonnative species that spread rapidly at the expense of native vegetation. Weeds have significant economic considerations through their impacts on rangeland health, increased wildfire, and direct control costs that include weed removal, crop and seed contamination, and equipment cleaning costs.

Related resources:

- Fire Management
- Air Quality



Source: NoxiousWeeds_Point, Date unknown, Several agencies contributed to data, Access via Utah Automated Geographic Reference Center. Historic Weed Points, Date Unknown, Cache County GIS Service.

18.1 Management Setting

18.1.1 Context

Noxious weeds have significant economic impacts on agriculture industries, reduce the diversity of the landscape, negatively impact forage for livestock and wildlife, increase wildfire susceptibility, and can diminish the visual quality of the landscape. County residents and visitors enjoy the natural vegetation found on the surrounding hillsides and mountains. This vegetation contributes to the area's aesthetics and offers excellent wildlife habitat. Natural vegetation also aids with stormwater control and helps to prevent erosion.

Control of noxious weeds is most successful when it is a collaborative effort of both public and private land owners and managers. The Blacksmith Fork and North Cache Conservation Districts of the National Resources Conservation Service identified invasive weeds as one of five natural resource priorities for Cache County because noxious weeds present serious problems in pasture, open lands, and the urban interface.[1]

18.1.2 Findings

Weed infestations are common across Cache County, which is accompanied by serious implications for natural resource managers.

> Outside of their native origins, noxious weeds become oppressors with no known natural competitors to keep their populations in check. These silent invaders quickly begin to out-compete native plants, ... forever changing our landscapes. Unlike other ornamental(s), ... noxious weeds are nothing short of ecological time bombs.[2]

Local governments, public land managers, and private property owners are responsible for controlling weed species included Utah's noxious weeds list and other local weed species of concern, when necessary. County weed control includes both lands under local management (roads, parks, etc.) as well as enforcing weed laws on private lands. State law provides county weed managers the right to treat weeds on private lands (assuming proper notice is provided) if the landowner is unwilling or unable to treat the problem themselves, and seek reimbursement or apply liens for the work.

Many species of exotic and invasive weeds exist in Utah. Some species, however, have more potential to be "injurious to public health, crops, livestock, land, or other property".[3] The Utah Noxious Weed Act of 2008 defined 28 noxious weed species including three prioritization categories. In December 2015 the official State Noxious Weed list was updated to include 54 species, and also modified prioritization categories.

Class 1A: Early Detection Rapid Response (EDRR) Watch List

This class includes declared noxious weeds and invasive weeds that are not native to the State of Utah and are not known to exist in the state but that pose a serious threat and should be considered a very high priority. The following species are on this list:

- Common crupina (*Crupina vulgaris*)
- Syrian bean caper (*Zygophyllum fabago*)
- African rue (*Peganum harmala*)
- Ventenata (North Africa grass) (*Ventenata dubia*)
- Small bugloss (*Anchusa arvensis*)

- Plumeless thistle (*Carduus acanthoides*)
- Mediterranean sage (*Salvia aethiopis*)
- Malta starthistle (*Centaurea melitensis*)
- Spring millet (*Milium vernale*)

Class 1B: Early Detection Rapid Response (EDRR) Watch List

This class includes declared noxious and invasive weeds that are not native to the State of Utah but are known to exist in the state in very limited populations, and that pose a serious threat to the state and should be considered as a very high priority. The following species are on this list:

- Camelthorn (*Alhagi maurorum*)
- Japanese knotweed (*Polygonum cuspidatum*)
- Garlic mustard (*Alliaria petiolate*)
- Blueweed (Viper's bugloss) (*Echium vulgare*)
- Purple starthistle (*Centaurea calcitrapa*)
- Elongated mustard (*Brassica elongate*)
- Goatsrue (*Galega officinalis*)
- Common St. Johnswort (*Hypericum perforatum*)
- African mustard (*Brassica tournefortii*)
- Oxeye daisy (*Leucanthemum vulgare*)
- Giant reed (*Arundo donax*)
- Cutleaf viper grass (*Scorzonera laciniata*)

Class 2: Control

This class includes declared noxious and invasive weeds that are not native to the State of Utah and that pose a threat to the state, which should be considered a high priority for control. Weeds listed in the control list are known to exist in populations of varying size throughout the state. The concentration of these weeds is at a level where control or eradication may be possible. The following species are on this list:

- Leafy spurge (*Euphorbia esula*)
- Dyers woad (*Isatis tinctoria*)
- Medusahead (*Taeniatherum caput-medusae*)
- Yellow starthistle (*Centaurea solstitialis*)
- Rush skeletonweed (*Chondrilla juncea*)
- Yellow toadflax (*Linaria vulgaris*)
- Spotted knapweed (*Centaurea stoebe*)
- Diffuse knapweed (*Centaurea diffusa*)
- Purple loosestrife (*Lythrum salicaria*)
- Black henbane (*Hyoscyamus niger*)
- Squarrose knapweed (*Centaurea virgata*)
- Dalmatian toadflax (*Linaria dalmatica*)

Class 3: Containment

This class includes declared noxious and invasive weeds that are not native to the State of Utah but are widely spread. Weeds listed in the containment class are noxious weeds list that are known to exist in populations of varying size throughout the state. Weed control efforts may be directed at reducing or

eliminating new or expanding weed populations. Known and established weed populations, as determined by the weed control authority, may be managed by any approved weed control methodology, as determined by the weed control authority. These weeds pose a threat to the agricultural industry and agricultural products. The following species are on this list:

- Russian knapweed (*Acroptilon repens*)
- Musk thistle (*Carduus nutans*)
- Houndstounge (*Cynoglossum officinal*)
- Quackgrass (*Elymus repens*)
- Perennial pepperweed (Tall whitetop) (*Lepidium latifolium*)
- Jointed goatgrass (*Aegilops cylindrical*)
- Phragmites (Common reed) (*Phragmites australis* ssp.)
- Bermudagrass* (*Cynodon dactylon*)
- Tamarisk(Saltcedar) (*Tamarix ramosissima*)
- Perennial Sorghum spp. (*Sorghum halepense* and *Sorghum almum*)
- Hoary cress (*Cardaria* spp.)
- Scotch thistle (Cotton thistle) (*Onopordum acanthium*)
- Canada thistle (*Cirsium arvense*)
- Field bindweed (Wild Morning-glory) (*Convolvulus* spp.)
- Poison hemlock (*Conium maculatum*)
- Punctureving (Goathead) (*Tribulus terrestris*)

Class 4: Prohibited

This class includes declared noxious and invasive weeds that are not native to the State of Utah and that pose a threat to the state through the retail sale or propagation in the nursery and greenhouse industry. Prohibited noxious weeds are annual, biennial, or perennial plants that the commissioner designates as having the potential to be or are known to be detrimental to human or animal health, the environment, public roads, crops, or other property. The following species are on this list:

- Cogongrass (Japanese blood grass) (*Imperata cylindrical*)
- Scotch broom (*Cytisus scoparius*)
- Myrtle spurge (*Euphorbia myrsinites*)
- Russian olive (*Elaeagnus angustifolia*)
- Dames rocket (*Hesperis matronalis*)

Cache County Noxious Weeds

State law allows additional weed species to be added to county noxious weed list if locally problematic, though Cache County has not declared any additional weeds to be noxious in the county.

18.1.3 Legal Context

The Utah Noxious Weed Act (Utah Code §4-17 [2008, amended 2015]) requires counties to maintain a county Weed Control Board, which is responsible to prevent and control noxious weeds on lands under their control of jurisdiction. The State Weed Committee and the Utah Commissioner of Agriculture and Food together determine the specific weed species that are declared as noxious across Utah (R68-9). Counties may add weeds to this list if other species become locally problematic. Section 7 of the Utah Noxious Weed Act allows counties to compel private landowners to treat weeds on their property. This act does not address weeds on federal lands that are managed by federal land management agencies.

The Plant Protection Act (7 USC§2814 et seq. [2000]) requires federal land managers to control undesirable plants on lands they manage through appropriate funding, staffing, and cooperative agreements and coordination with state and local weed-control efforts. The US Forest Service (Forest Service) addressed weed management in its Forest Plan. They further clarified weed management in the 2006 Noxious Weed Treatment Program Environmental Impact Statement[4], in which the Forest Service targets species from state and local noxious weed lists. Information on US Bureau of Land Management's nationwide strategy for weed management is available on their Invasive and Noxious Weeds website.[5]

18.2 Desired Future State

Cache County desires to place a high priority on the prevention and control of noxious weed infestations on public lands.

18.3 Management Objectives and Associated Policies and Guidelines

18.3.1 Management Objective

Prevention is the most cost-effective best management practice for controlling noxious weeds.

Policies and Guidelines

a. Clean contaminated machinery and equipment prior to transport.

b. Cover seed and feed during transport to prevent spilling material.

c. Inspect nursery stock for contamination.

d. Utilize appropriate landscaping techniques to prevent invasive species.

e. Livestock must be on weed-free feed for several days before transferred to public land.[6]

f. Treat newly detected weeds before they become prolific.

g. Restore treated areas with appropriate native species as needed

18.3.2 Management Objective

Support early noxious weed detection through weed inventory mapping and monitoring efforts to identify new outbreaks and track existing infestations.

Policies and Guidelines

a. Support weed mapping throughout the county.

18.3.3 Management Objective

Support rapid treatment of noxious weeds to control existing weed infestations utilizing a suite of available tools, also known as integrated weed management.

Policies and Guidelines

a. Use these treatment methods:

- Chemical treatment using hand, vehicle, and aerial applications,
- Mechanical treatments (mowing),
- Biological treatments, including insects and grazing livestock such as goats and cattle,
- Physical treatments, including water removal, flooding, and burning.

18.3.4 Management Objective

Regulation and enforcement of noxious and invasive weeds within the county.

Policies and Guidelines

a. Maintain full participation on the Cache County Weed Control Board.

b. Coordinate county-wide with agencies, local governments, and other landowners and land managers regarding weed management issues, and continue participation in the local Cooperative Weed Management Area.

c. Add weed species to the Cache County Noxious Weed list to control new weeds if necessary.

18.3.5 Management Objective

Appropriately manage existing and invasive weeds in Cache County through education, research and funding.

Policies and Guidelines

a. Support public education efforts that target weed identification, prevention, and suppression.

b. Encourage innovative funding solutions for weed control and management solutions.

c. Support efforts to apply for state and federal grants to support weed control efforts in the county.

18.4 References

[1] USDA, Natural Resource Conservation Service. Cache County Resource Assessment. September 2011.

[2] Salt Lake County. 2017. Weed Control Website. http://slco.org/weeds/ (accessed March 23, 2017).

[3] Utah State Legislature. 2015. Utah Noxious Weed Act – Administrative Rules. Enacted July 2, 2008, Modified December 15, 2015. http://le.utah.gov/xcode/Title4/Chapter17/4-17.html (accessed January 25, 2016.)

[4] Forest Noxious Weed Treatment Program. Final Environmental Impact Statement. Wasatch Cache National Forest.

[5] US Department of the Interior, US Bureau of Land Management. 2017. Invasive & Noxious Weeds Website. https://www.blm.gov/wo/st/en/prog/more/weeds.html (accessed March 23, 2017)

[6] US Forest Service. 2001. Forest Service Manual 2080, Noxious Weed Management.

http://www.fs.fed.us/im/directives/field/r1/fsm/2000/r1-2080.doc (Accessed May 1,2017).

19. PREDATOR CONTROL

Predator control includes strategies and practices to control the actions of, or reduce the number of, predator animals, nuisance animals, and insects.

Related resources:

- Livestock and Grazing
- Wildlife

19.1 Management Setting

19.1.1 Context

Predator and prey populations require balance to avoid adverse impacts from either population. Predator control is primarily a function of the Utah Department of Wildlife Resources (DWR) and the US Department of Agriculture Animal and Plant Health Inspection Service (APHIS) Wildlife Services. Coyote removal is recommended by the DWR for all mountainous areas in Cache County that are inhabited by mule deer. Other targeted predator control is conducted by DWR and APHIS when problematic animals take livestock.

Some native and introduced species of wildlife thrive in urban environments and have become nuisance animals. Control efforts can be undertaken by APHIS and through local ordinance to reduce nuisance wildlife. Insects can also be problematic in some portions of Cache County.

19.1.2 Findings

The APHIS Wildlife Services program and DWR coordinate efforts to resolve wildlife conflicts on public and private lands. Conflicts can occur for many reasons, including the following: (1) predators injuring or killing livestock, (2) wildlife damaging farm crops or raiding livestock feed stocks, and (3) wildlife populations becoming problematic in residential areas.

19.1.3 Legal Context

Applicable Laws

The Animal Damage Control Act (7 USC §426-426c [1931]), as amended, gives the Secretary of Agriculture authority to control a range of predatory animals to protect livestock, game animals, and wildlife. The Secretary of Agriculture delegated this authority to the APHIS and the Animal Damage Control Program. A 1993 Memorandum of Understanding between the Forest Service and APHIS provides that "APHIS and state agencies are recognized as having the authority and expertise to conduct predator control on National Forest System lands, to determine livestock losses, and to determine methodology for animal damage management. Under the Memorandum of Understanding, APHIS is named the lead agency in preparing environmental documentation for predator control and other animal damage and insect management activities initiated by APHIS on National Forest System lands."[1]

At the state level, predator populations are primarily controlled through manipulation of hunting licenses, though individual animals can be removed if they become problematic. When livestock are injured or killed, the Wildlife Damage Compensation Act of 2011 (Utah Code §23-21-1) provides a mechanism for the DWR to reimburse livestock owners for damage caused by bear, mountain lion, wolf, and eagle populations. The Utah Mule Deer Protection Act of 2012 (Utah Code §23-30-101) added a $5 fee to big

game hunting permits, which fund the predator control programs. Money from this fund is used by the DWR to reimburse coyote hunters and trappers $50 for each coyote lawfully removed. The Wolf Management Act of 2010 (Utah Code §23-29) acknowledges that wolves are currently covered by the ESA but it is the policy of Utah that wolves should be actively managed (controlled) and not be allowed to establish anywhere in the state.

19.2 Desired Future State

Cache County desires to maintain sustainable and mutually beneficial predator and prey populations by methods not harmful to other wildlife, livestock, or humans.

19.3 Management Objectives and Associated Policies and Guidelines

19.3.1 Management Objective

Encourage DWR and APHIS to maintain sustainable and mutually beneficial predator and prey populations.

Policies and Guidelines

- Cooperate with DWR and APHIS to determine management priorities for predators and nuisance species.

- Support predator control programs when native species require relief from predators. Depleted native species whose populations require relief from native predators, receive assistance for as long as they need it, and no longer.[2]

- Keep problematic bird and mammal species in check for cases in which their success has the potential to become problematic to humans as well as sensitive wildlife.[3]

- Coordinate with APHIS Wildlife Services program to conduct wildlife damage management to protect agricultural, industrial and natural resources, property and human health and safety from damage associated with wildlife.

19.3.2 Management Objective

Support public education programs that increase awareness for predator-prey relationships and management practices.

Policies and Guidelines

Support public education programs that increase awareness for predator-prey relationships and management practices.

19.4 References

[1] US Forest Service. 1995. TITLE 2600 - Wildlife, Fish, and Sensitive Plant Habitat Management, Amendment No. 2600-95-5. https://www.fs.fed.us/dirindexhome/fsm/2600/2650.txt (accessed March 25, 2017).

[2] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah Wildlife Action Plan, Draft Version 6-4-2015. https://wildlife.utah.gov/wap/wap2015draft.pdf (accessed March

14, 2017).

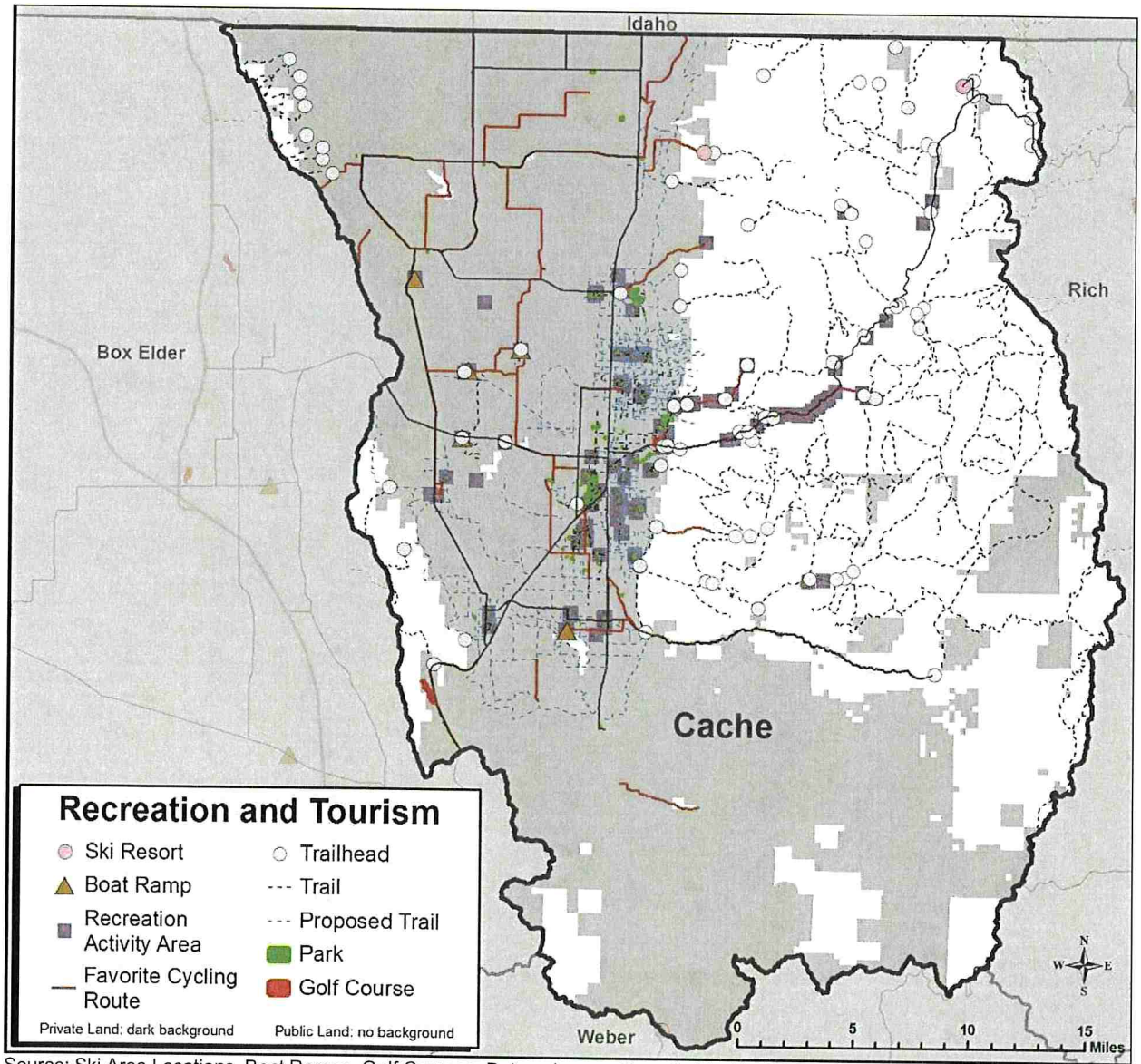
[3]. Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2017. Utah's Predator Control Program Summary Program activities and data from July 1, 2014 through June 30, 2015. https://wildlife.utah.gov/pdf/predator_program_summary_2015.pdf (accessed April 2017).

20. RECREATION AND TOURISM

Recreation consists of activities that are pursued for enjoyment. Tourism is the social, cultural, and economic phenomenon of visiting places for pleasure. Outdoor recreation is a significant and growing part of Utah's economy. Tourists and travelers spent a record $8.2 billion in the Utah economy during 2015, and the tourism industry supported an estimated 137,192 jobs.

Related resources:

- Land Access
- Land Use
- Wilderness



Source: Ski Area Locations, Boat Ramps, Golf Courses, Date unknown, Compiled by Utah Automated Geographic Reference Center. Trails, Proposed Trails, Trailheads, Recreation Areas, Favorite Cycling Routes, and Parks, Date Unknown, Cache County GIS Service.

20.1 Management Setting

20.1.1 Context

Cache County's public lands provide a variety of recreational opportunities for local residents and visitors. The public lands in Cache County receive year-round use. Excessive use can threaten natural resources such as water quality and wildlife habitat and cause conflict among user groups.

These resources provide residents and visitors with a number of diverse recreational opportunities. The county recognizes the economic benefits that tourism brings to the area and will continue to promote tourism as a viable economic industry. Cache County public lands are home to a variety of recreation uses. State law allows counties to levy taxes on activities related to leisure and hospitality including hotel stays (transient room tax) and dining (restaurant tax). These taxes allow the county to raise funds for local uses. Cache County's highway corridors provide connectivity between communities as well as access to public land for recreation and tourism.

20.1.2 Findings

Many of Cache County's recreational opportunities are located on public lands. The Uinta-Wasatch-Cache National Forest encompasses 2.1 million acres of public land in Utah, 285,644 acres of which are located within Cache County and managed by the US Forest Service.

Logan Canyon is part of the Cache National Forest. US Highway 89, which runs through Logan Canyon from Logan to Garden City, is a National Scenic Byway. Logan River is a Blue Ribbon Trout Fishery and home to the largest wild and native population of Bonneville cutthroat trout in the nation. Blacksmith Fork Canyon also lies within the Cache National Forest, and the Blacksmith Fork River is likewise a Blue Ribbon Trout Fishery. While these resources may attract visitors from all parts of the United States and abroad, they are not considered major tourist destinations.

There are nine designated Wilderness areas in the Uinta-Wasatch-Cache National Forest, two of which are located within Cache County—the Mount Naomi Wilderness Area and the Wellsville Mountain Wilderness Area.

The Mount Naomi Wilderness Area encompasses 44,523 acres located between the Logan River and the Idaho state line in the northeast portion of Cache County. The area boasts developed trailheads, 65 miles of trails, alpine scenery, and sweeping views of Cache Valley. It provides habitat for deer, elk, moose, mountain lion and many other species. Its highest point is 9,980-foot Naomi Peak, and there are several other peaks of 9,000-foot elevation.

The Wellsville Mountain Wilderness Area encompasses 20,988 acres and is located along approximately 14 miles of the north-south running ridge of the Wellsville Mountains on the west side of Cache Valley. The area is unique because it is one of the narrowest mountain ranges of the Rocky Mountains—although the peaks reach elevations of more than 9,000 feet, the width of the range at its base averages only about five miles, forming blade-like mountains and spectacularly rugged terrain. This area is home to a variety of wildlife, including deer, moose, mountain lion, and, reportedly, bighorn sheep. The area has three trail systems, 17 miles of trails, and its highest point is 9,372-foot Box Elder Peak.

Other recreational and tourism draws include Hardware Ranch Wildlife Management Area in Blacksmith Fork Canyon, Hyrum and Newton reservoirs, Cutler Marsh on the Bear River (an important area for migrating birds and very popular for canoeing and birding), Jensen Historical Farm, and the China Cave

rock climbing area. Cache County has a total of 271 miles of hiking trails, 325 miles of ATV trails, 60 miles of walking trails, and 6 miles of biking trails. These attractions are also known to locals and draw some outside visitors but are not major tourist destinations—rather they are often enjoyed while passing through to more significant regional locations like Yellowstone National Park or Bear Lake.

20.1.3 Legal Context

Applicable Laws

The US Forest Service (Forest Service) makes land use decisions, including for recreation by developing Forest Plans, under the National Forest Management Act (16 USC §1600 et seq. [1976]). The Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]) mandates the US Bureau of Land Management to manage lands, including recreational uses, under multiple-use philosophy. Both federal land managers set recreation policy following planning procedures specified by the National Environmental Policy Act (42 USC §4321 et seq. [1969]).

State laws applicable to recreation and tourism include the Transient Room Tax enabled by Utah Code: §59-12-3 et seq., which allows counties to levy a tax up to 4.25% on hotel accommodations. The Tourism, Recreation, Cultural, Convention, and Airport Facilities Tax Act, (Utah Code §59-12-6 et seq.) allows counties to levy a tax up to 4% on short-term motor vehicle rentals. Funds collected under this law may be used for the development, operation, and maintenance of cultural, recreational, or tourist facilities. Utah Code §17-31-8 requires all counties which levy either taxes to form an advisory board to represent industries being taxed. Utah Code §63N-7-1 created the Board of Tourism that advises the Utah Governor's Office of Economic Development on "planning, policies, and strategies and on trends and opportunities for tourism development."

20.2 Desired Future State

Cache County desires to maintain a comprehensive recreation system on public lands to provide diverse year-round recreation opportunities on public lands. The county also desires to avoid user group conflict through separation of uses to the extent practical. When planning for such objectives, improvements, etc., Cache County desires to include a diverse range of stakeholders, including local user groups.

20.3 Management Objectives and Associated Policies and Guidelines

20.3.1 Management Objective

Engage recreation users, resource managers, and local residents in developing strategies for managing recreation to meet desired future conditions and address recreation pressures and demands.

Policies and Guidelines

a. Work cooperatively across agencies to support recreation choice and demand.

20.3.2 Management Objective

Manage existing recreational system to provide a high degree of user satisfaction through mitigation of user conflict.

Policies and Guidelines

a. Provide recreation systems that accommodate a spectrum of activities, while recognizing that not all

are compatible in the same location. When conflicts arise, pursue practical, lasting, win-win solutions in an atmosphere of open communication, broad participation, and respect.[1] Support public land management agencies, local governments, businesses, and citizen groups in their efforts to coordinate maintenance of existing recreational facilities.

20.3.3 Management Objective

Encourage a high quality recreation experience for visitors and residents.

Policies and Guidelines

a. Encourage participation from a diverse range of stakeholders in development of recreation system improvements, including local governments, private landowners, recreation groups, and other stakeholders.

20.4 References

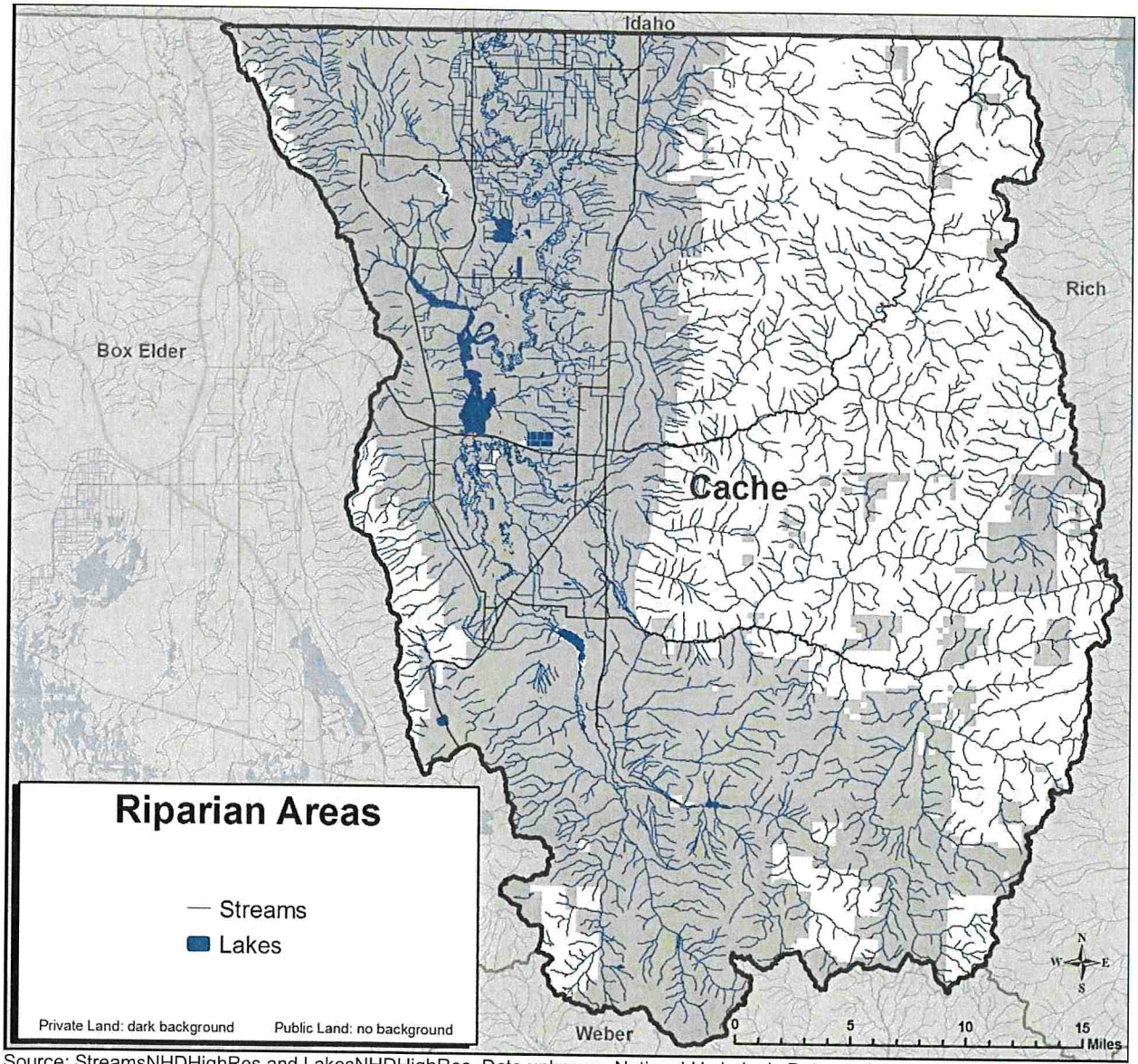
[1] Utah Governor's Council on Balanced Resources. 2013. State of Utah Outdoor Recreation Vision. https://www.utah.gov/governor/docs/OutdoorRecreationVision.pdf (accessed April 12, 2017).

21. RIPARIAN AREAS

Riparian areas are zones where terrestrial and aquatic ecosystems directly interact with each other. They occur around numerous types of waterbodies including rivers, lakes, and springs. Similar to wetlands, riparian areas provide numerous benefits to society, but a few of the most important of these include wildlife habitat area, hydrologic recharge areas, and water quality improvements.

Related resources:

- Flood Plains and River Terraces
- Wetlands
- Water Quality and Hydrology



Source: StreamsNHDHighRes and LakesNHDHighRes, Date unknown, National Hydrologic Dataset, Access via Utah Automated Geographic Reference Center.

21.1 Management Setting

21.1.1 Context

Riparian areas are important for many reasons. They are a key component of the hydrological system and act as buffers by intercepting or diluting pollutants and sediment before they reach the water. Riparian areas play an important role in erosion processes by slowing water and stabilizing stream banks. They provide critical wildlife habitat and are an important component of both terrestrial and aquatic ecosystems. The width of riparian areas is influenced by many factors including human disturbance, hydrology, and climate.

Because riparian areas are highly sensitive to disturbances, it is important to manage them with respect to surrounding areas and their land use.[1] Riparian areas are disturbed by human activities such as livestock grazing, road building, housing and other development as well as recreation activities. Riparian areas are also disturbed by natural forces, including fire and flooding. After disturbances, riparian areas become prime locations for the establishment of invasive and noxious weeds. Climate change also affects riparian areas by altering flow regimes and increasing water temperature, thereby threatening cold water fisheries.

Riparian area health on public lands can impact water quality utilized on private lands in Cache County.

21.1.2 Findings

Table 21.1 shows riparian acreage in Cache County by land ownership.

Table 21.1. Total acreage of riparian vegetation in Cache County and on public lands.

RIPARIAN TYPE	CACHE COUNTY (ACRES)	FEDERAL (ACRES)	STATE (ACRES)	PRIVATE (ACRES)
Western Riparian Woodland and Shrubland	7,676	3,137	485	4,054
Western Herbaceous Wetland	26	0	4	22

Source: US Geological Survey, Landfire Existing Vegetation Type, 2012.

21.1.3 Legal Context

Applicable Laws

Riparian vegetation is not regulated directly by federal or state legislation. There are, however, statutes that cover associated resources and do have implications for riparian areas. Section 404 of the Clean Water Act (33 USC §1344 et seq.) regulates permits for dredged or fill material in Waters of the United States. The Endangered Species Act (16 USC §1531 et seq. [1973]), also referred to as the ESA, may sometimes cover riparian areas when projects impact habitat of a listed species.

21.2 Desired Future State

Where needed, Cache County desires to protect and restore functioning aquatic and terrestrial riparian habitats to support wildlife, fisheries, floodplains, and water quality.

21.3 Management Objectives and Associated Policies and Guidelines

21.3.1 Management Objective

Support projects and management efforts that protect or restore riparian ecosystems, increasing the riparian area's resilience and ability to be used for multiple purposes.

Policies and Guidelines

a. Avoid locating disruptive activities in riparian areas when possible, including cabins, camping, road construction, unmanaged grazing, and weeds.[2,3]

b. Support the increase of cover and extent of riparian vegetation by restoring beavers on the landscape, where social and environmental factors permit (according to the Beaver Restoration Assessment Tool).[4]

21.4 References

[1] Jordan River Commission. 2013. Best Practices for Riverfront Communities. http://jordanrivercommission.com/wp-content/uploads/BP-high-res-for-web.pdf (accessed March 23, 2017).

[2] Bellows, Barbara. 2003. Managed Grazing in Riparian Areas. Appropriate Technology Transfer for Rural Areas. https://extension.usu.edu/rangelands/files/uploads/General%20Grazing%20Management/Riparian%20grazing.pdf. Accessed 14 March 2017.

[3] Sheley et.al. 1995. Managing Riparian Weeds. Rangelands 17(2). https://journals.uair.arizona.edu/index.php/rangelands/article/viewFile/11260/10533.

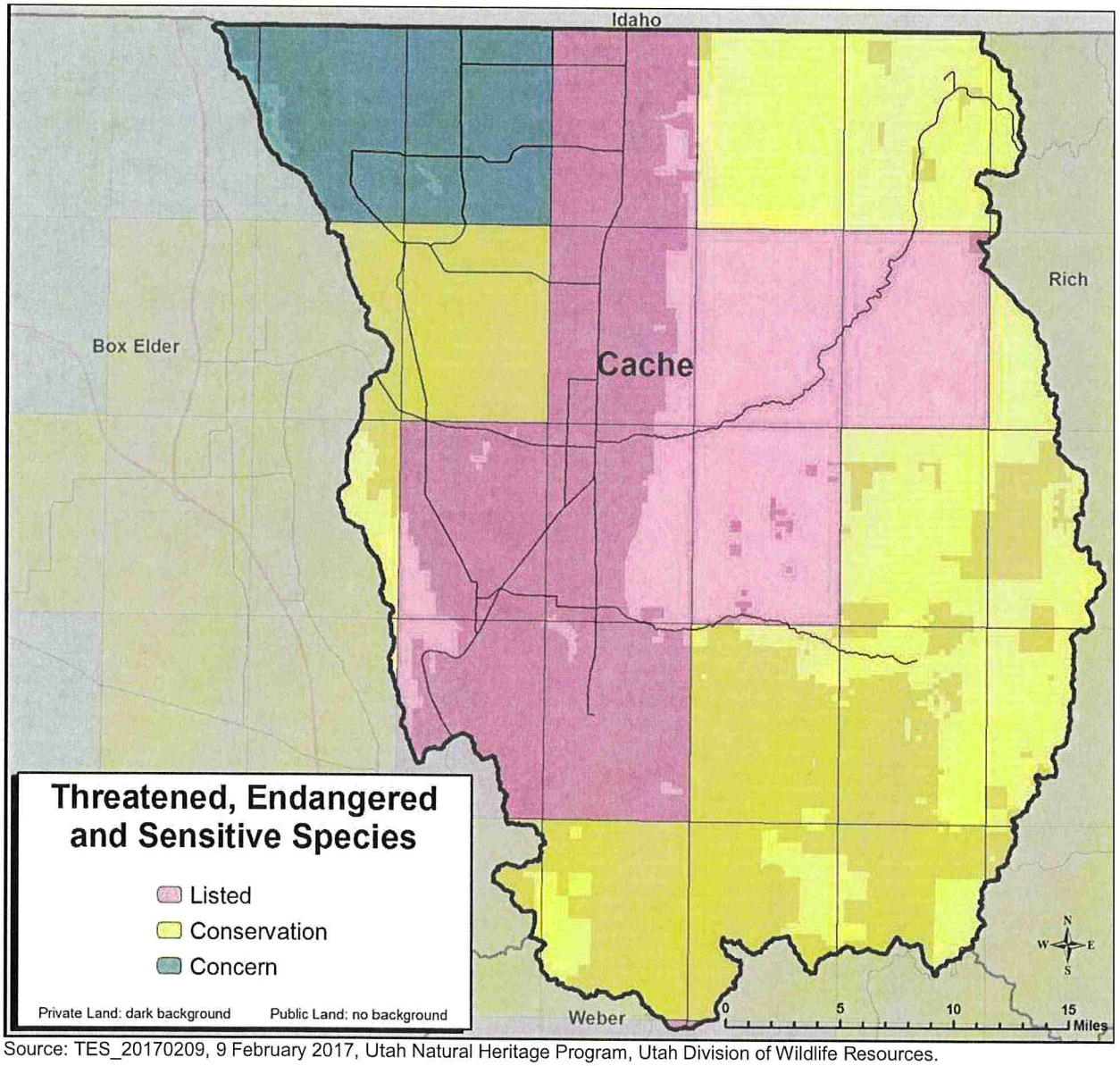
[4] Macfarlane, William, et. al. 2014. The Utah Beaver Restoration Assessment Tool: A Decision SUpport and Planning Tool, Final Report to the Utah Division of Wildlife Resources. Utah State University.

22. THREATENED, ENDANGERED, AND SENSITIVE SPECIES

Threatened, endangered, and sensitive species refers to plant, animal, and other living organisms that are, to some level, threatened by extinction. Federal and state governments have management responsibility to protect and restore imperiled species and the critical habitat that supports them.

Related resources:

- Wildlife
- Fisheries



Source: TES_20170209, 9 February 2017, Utah Natural Heritage Program, Utah Division of Wildlife Resources.

22.1 Management Setting

22.1.1 Context

Critically imperiled plant and animal species are federally listed according to the Endangered Species Act (ESA). Under the ESA the US Fish and Wildlife Service is responsible for conservation of terrestrial and freshwater aquatic species that are endangered or threatened with extinction due to loss of habitat, overutilization, disease, predation, inadequate protection, and other factors both human-made and natural. For sensitive species in Utah that are not protected by the ESA, the Utah Division of Wildlife Resource (DWR) is tasked with conservation. Utah's primary objective for managing sensitive species is to maintain wildlife and wildlife habitat well enough to prevent federal designation.[1] Once a species is federally listed, the state loses primacy for the management of that species. This implies federal regulation of activities on state and private lands that may directly threaten listed species or that species' habitat. From state and local perspectives, federal designation of endangered species means less local control of land use issues, which might cause harm to the designated species.

Utah's 2015 Wildlife Action Plan stated goal is "to manage native wildlife species and their habitats, sufficient to prevent the need for additional listings under the Endangered Species Act".[1] This goal precludes plants.

The DWR Habitat Designation Advisory Committee divides species into three categories following an official Designation Process (DWR Administrative Rule R657-48).[2] This ranking includes plants. The ranking system is summarized in the following list:

- ***S-ESA.*** Federally listed or candidate species under the ESA.
- ***CS.*** Species receiving special management under a Conservation Agreement in order to preclude the need for federal listing.
- ***SPC.*** Species of concern.

22.1.2 Findings

Cache County has four federally listed species under the ESA[2]:

- Brown (grizzly) bear (*Ursus arctos*) (extirpated)
- Canada lynx (*Lynx canadensis*)
- Maguire primrose (*Primula maguirei*)
- Ute ladies'-tresses (*Sphyrapicus thyroideus*)

Cache County has three wildlife species federally listed as candidates for ESA which also have conservation agreements with the DWR[3]:

- Greater Sage-grouse (*Centrocercus urophasianus*)
- Yellow-billed Cuckoo (*Coccyzus americanus*)
- Least Chub (*Iotichthys phlegethontis*)

Cache County has 21 wildlife species for which the DWR has identified as wildlife species of concern. Species denoted with an asterisk (*) have a conservation agreement with the DWR. The species are as follows:[2,3,4]

- American three-toed woodpecker (*Picoides dorsalis*)
- American white pelican (*Pelecanus erythrorhynchos*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Black swift (*Cypseloides niger*)
- Bluehead sucker (*Catostomus discobolus*)*
- Bobolink (*Dolichonyx oryzivorus*)
- Bonneville cutthroat trout (*Oncorhynchus clarkii utah*)*
- Burrowing owl (*Athene cunicularia*)
- California floater (*Anodonta californiensis*)
- Deseret mountainsnail (*Oreohelix peripherica*)
- Fringed myotis (*Myotis thysanodes*)
- Grasshopper sparrow (*Ammodramus savannarum*)
- Great plains toad (*Bufo cognatus*)
- Greater sage-grouse (*Centrocercus urophasianus*)*
- Least chub (*Iotichthys phlegethontis*)*
- Lewis's woodpecker (*Melanerpes lewis*)
- Long-billed curlew (*Numenius americanus*)
- Lyrate mountainsnail (*Oreohelix haydeni*)
- Northern goshawk (*Accipiter gentilis*)*
- Pygmy rabbit (*Brachylagus idahoensis)*
- Sharp-tailed grouse (*Tympanuchus phasianellus*)

22.1.3 Legal Context

Applicable Laws

The ESA (16 USC §1531 et seq. [1973]) was established to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species."

Utah code related to threatened and endangered species begins with Utah Code §23-14-1, which created the DWR with authority over wildlife in the state. Under this authority, the DWR works to protect and manage sensitive wildlife species.

The US Department of Interior and Related Agencies Appropriations Act of 2002 created the federal State Wildlife Grants (SWG) program, which enables Congressional appropriators to consider funding wildlife and habitat conservation on a year-to-year basis. This law requires that each state have a current, approved Wildlife Action Plan to remain eligible for any SWG funding that Congress appropriates to the federal program. States that choose to participate in the SWG program must review and revise their Wildlife Action Plans at least once every 10 years, if they want to maintain their eligibility." Utah's initial Wildlife Action Plan was completed and approved in 2005, and there is currently a 2015 draft available.[1]

In 2009 the state passed the Brine Shrimp Royalty Act (Utah Code §59-23 et seq.), which initiated a royalty on brine shrimp harvest in the Great Salt Lake to fund the Endangered Species Mitigation Fund.

The Endangered Species Mitigation Fund significantly expanded the funding base for conservation of wildlife species which are designated as Utah Sensitive Species or are ESA listed. The purpose of this fund is to avoid, reduce, and/or mitigate impacts of ESA listings on the people of Utah.[5] Funds are used by the DWR to study and protect state listed special status species.

22.2 Desired Future State

Cache County desires to maintain viability of at-risk wildlife and plant species (including endangered, threatened and sensitive species and unique communities) and their habitats.

22.3 Management Objectives and Associated Policies and Guidelines

22.3.1 Management Objective

Protect and restore degraded habitats and connectivity between fragmented habitats where at-risk wildlife and plant species are found.

Policies and Guidelines

a. Support efforts that restore degraded habitats and connectivity between fragmented habitats.

b. Limit grazing in sensitive areas, including riparian areas and aquatic habitats.

c. Restore or maintain hydrologic functions of water bodies and waterways.[1]

d. Promote aquatic habitat protection. Preserve aquatic habitats identified by agencies as used or occupied by special status species in their current state by avoiding any action that would remove water from these areas.[1]

e. Encourage responsible recreation and effective education and enforcement.

f. Coordinate with Department of Natural Resources and the Utah Department of Transportation to reduce wildlife-vehicle collisions on Cache County roadways. Support projects which aim to mitigate wildlife-vehicle collisions.

22.3.2 Management Objective

Support the primary goals outlined in the DWR Utah's Wildlife Action Plan, which seeks to keep native species off the Endangered Species List.

Policies and Guidelines

a. Support efforts by the Utah Department of Natural Resources to implement Utah's Wildlife Action Plan.

b. The support and implementation of policies and guidelines for at-risk species will also provide increased protection for all of Utah's plants and animals.

22.4 References

[1] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah Wildlife Action Plan, Draft Version 6-4-2015. https://wildlife.utah.gov/wap/wap2015draft.pdf (accessed March

14, 2017).

[2] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah State Listed Species by County. http://dwrcdc.nr.utah.gov/ucdc/viewreports/sscounty.pdf (accessed April 12, 2017).

[3] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2016. County-by-County list of Sensitive Species. Tabular Data. https://wildlife.utah.gov/wap/species_by_county.zip (accessed March 27, 2017).

[4] Utah Department of Natural Resources, Division of Wildlife Resources. 2015. Utah Sensitive Species List. http://dwrcdc.nr.utah.gov/ucdc/viewreports/SSL_Appendices.pdf (accessed March 27, 2017).

[5] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2014. Endangered Species Mitigation Fund. https://naturalresources.utah.gov/wp-content/uploads/ESMFguidelines2014forwebsite.pdf (accessed March 27, 2017).

23. VISUAL RESOURCES

Visual resources are the objects, scenes, vistas, etc., that people experience, whether natural or human-made. They are often considered on the landscape scale but small features can also be a visual resource.

Related resources:

- Cultural, Historical, Geological, and Paleontological Resources
- Land Use

23.1 Management Setting

23.1.1 Context

Scenic views add to the quality of life. Cache County has mountains, peaks, canyons, rivers, a wide valley, and urban and rural environments that all contribute to the scenic resource of the county.

23.1.2 Findings

Public lands provide the stunning mountainous scenery of the county. The skyline of snowy peaks, tree-covered mountainsides, and canyons are primarily managed by the US Forest Service (Forest Service).

23.1.3 Legal Context

Visual resources on public lands are generally managed during land and resource planning processes. For their most recent plans, the Forest Service used the Scenery Management System to evaluate and manage scenery resources.[1]

Applicable Laws

Visual resources on federal lands are managed under land use planning procedures specified for the Forest Service by the National Forest Management Act (16 USC §1600 et seq. [1976]) subject to the National Environmental Policy Act (42 USC §4321 et seq. [1969]) planning process.

23.2 Desired Future State

Cache County desires to maintain or improve the visual resources within the county.

23.3 Management Objectives and Associated Policies and Guidelines

23.3.1 Management Objective

Maintain or improve visually appealing scenes and views on public lands in Cache County.

Policies and Guidelines

a. Encourage land use goals, decisions and transportation and utility solutions to consider the impacts of development on visual resources and the overall experience the public has on public lands.

b. Encourage preservation and maintenance of significant vistas and landscapes that have special visual and aesthetic qualities.

23.4 References

[1] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (accessed March 23, 2017).

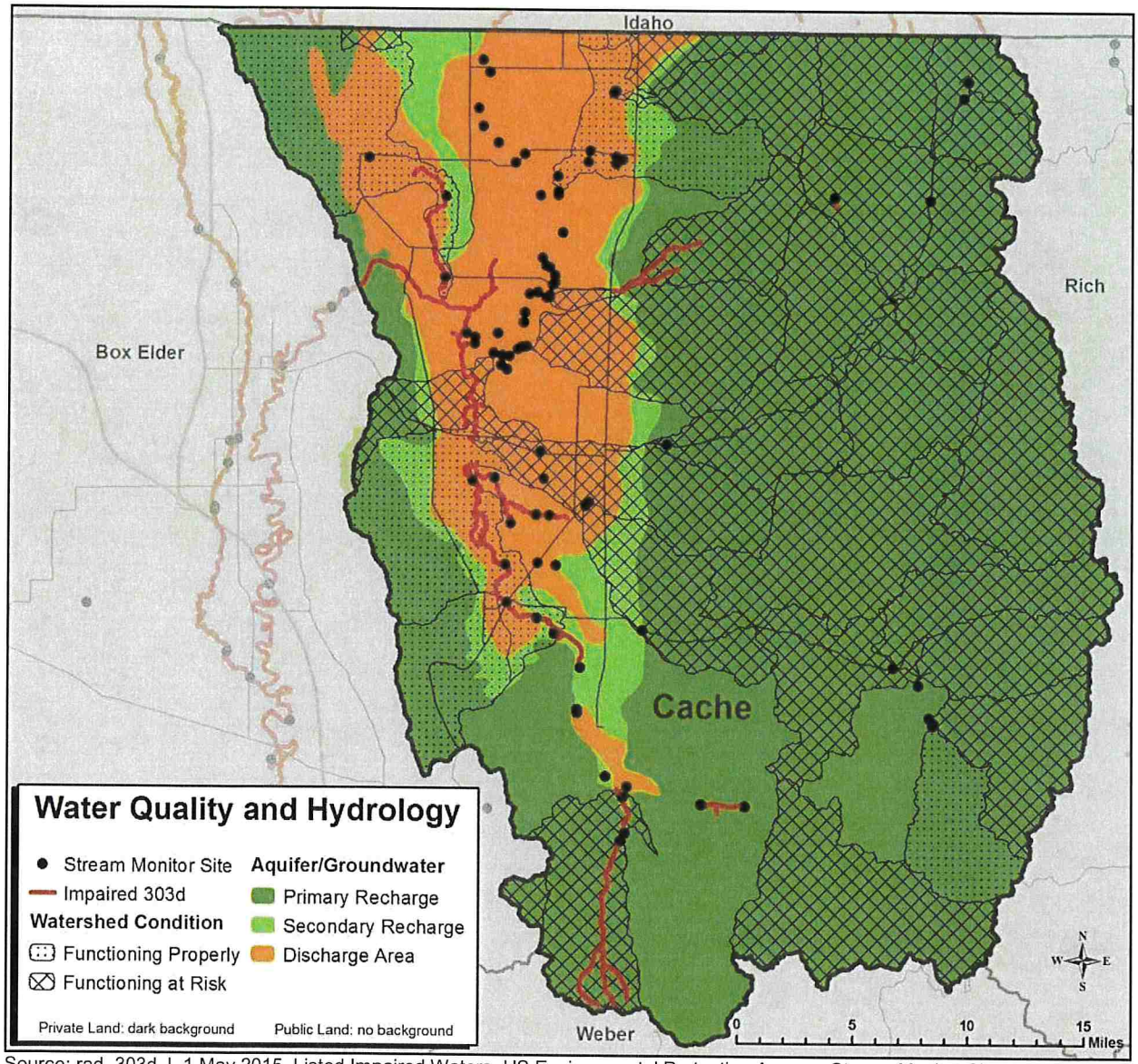
24. WATER QUALITY AND HYDROLOGY

Water quality and hydrology are two distinct but inherently related components of water. Water quality describes the condition (physical, chemical, and biological) of water with respect to specific uses, such as culinary water supply, aquatic wildlife, or agriculture. Water quality is highly affected by flow and timing (the poorest water quality usually occurs during periods of low flow).

Hydrology characterizes the timing (when water is available), distribution, and flow of water across the human and natural landscape.

Related resources:

- Irrigation
- Water Rights
- Floodplains and River Terraces
- Wetlands



Source: rad_303d_l, 1 May 2015, Listed Impaired Waters, US Environmental Protection Agency. Stream Monitor Sites, Date unknown, Compiler unknown, Access via Utah Automated Geographic Reference Center. Watershed and Aquifer/Groundwater, Unknown date, Bear River Association of Governments.

24.1 Management Setting

24.1.1 Context

Water Quality: The watersheds that serve Cache Valley are critically important water sources for agricultural uses. Maintaining good water quality can have positive cascading benefits to other resources such as recreation and tourism, wetlands, wildlife, fisheries, and agriculture.

Hydrology: Winter and spring snowfall are the principle sources of surface water in this region. Annual melting of high-elevation snowpack creates water runoff flows that refill reservoirs and recharge groundwater aquifers. Spring peak flows also support sediment transport, channel maintenance, and riparian vegetation. Spring rains provide a minor contribution to reservoir storage but are primarily important for postponing the timing of reservoir water use. Low flows or dry conditions generally occur in the late summer, which result in many water quality issues.

The Utah Division of Water Quality (DWQ) is responsible for managing water quality through the National Pollutant Discharge Elimination System (NPDES) permit systems on point sources. The DWQ also works to control non-point source pollution through development of Total Maximum Daily Loads (TMDL) for streams and waterbodies in the county.

24.1.2 Findings

Water Quality: In Utah, water quality is regulated by the state based on the source of pollutants entering waterways, defined either as "point source" or "nonpoint source" pollution. Point sources discharge pollutants directly into a waterbody, usually through pipes or ditches originating from industries or waste treatment plants. Nonpoint sources of pollution are those that do not originate from distinct locations and tend to vary in time and space. Nonpoint source pollution occurs when runoff from rainfall or snowmelt picks up pollutants from the human and natural landscape and transports them indirectly to a waterbody.

Common water quality characteristics include the following:

- ***Conductivity.*** A measure of the ability of water to conduct an electrical current. It is dependent on the amount of dissolved solids in the water.

- ***Dissolved oxygen.*** A measure of the amount of oxygen dissolved in water. Water's capacity to carry dissolved oxygen is inversely related to temperature; as temperature increases, dissolved oxygen decreases. Fish and other aquatic organisms require dissolved oxygen for respiration. If dissolved oxygen levels are too low, aquatic organisms can be severely impacted.

- ***Nutrients.*** Nutrients such as nitrogen and phosphorus are essential for plant and animal growth and nourishment. However, excessive nutrients from human sources become problematic when they over accumulate and can cause adverse effects within waterbodies. For example, nutrient-fed algal blooms can consume oxygen needed by other aquatic organisms, produce toxins that can harm livestock and humans, and contaminate recreational waters.

- ***pH.*** A measure of acidity, pH is used as an indicator of chemical changes in the water. Some streams in Utah tend to have slightly higher pH because of their limestone substrates.

- ***Suspended sediment.*** The amount of sediment moving along a stream suspended in the water column. This depends partly on water flow; fast-flowing water can move more sediment than slow-flowing

water. This measurement also depends on the amount of fine sediments available to transport.

- ***Water temperature.*** Changes in water temperature can impact aquatic organisms, as well as humans (e.g., recreational and industrial uses). Water temperature also affects dissolved oxygen—as temperature increases, water's capacity to dissolve oxygen decreases.

- ***Turbidity.*** A measure of the amount of particulate matter that is suspended in water. Turbidity measures the scattering effect that suspended solids have on light entering the water.

Common point sources of water pollution include the following:

- Livestock feeding operations
- Industrial wastewater
- Municipal wastewater
- Pesticide applications
- Stormwater inputs
- Construction activities
- Industrial activities
- Municipal and transportation sources

Common nonpoint sources and pollutants include:[1]

- Fertilizers, herbicides, and insecticides from residential and agricultural areas
- Roads
- Oil, grease, and other chemicals on impervious surfaces such as roads and parking lots
- Sediment from construction areas and roadways
- Salts from roadways and agricultural areas
- Acid drainage from abandoned mines
- Bacteria and nutrients from septic systems, pet waste, and livestock

Hydrology

In terms of defining local hydrologic systems, spatial datasets from the US Geological Survey like the National Hydrography Dataset and the Watershed Boundary Dataset are used to determine the location of surface water (rivers, lakes, and springs) in Cache County. Tables 24.1 and 24.2 provides information about the type and extent of streams and water bodies in Cache County.

Table 24.1. Total miles of linear water features in Cache County.

STREAM TYPE	STREAM MILES BY LOCATION			
	Cache County	Federal	State	Private
Artificial Path	144	5	4	135
Canal/Ditch	371	4	4	363
Intermittent Stream/ River	166	71	7	88
Perennial Stream/River	496	127	35	334
Ephemeral Stream/River	1,501	673	73	755
Pipeline	7	2	0	5
Totals	2,685	882	123	1,680

Source: US Geological Survey, National Hydrological Dataset, Streams.

Table 24.2. Total acres of water bodies in Cache County.

WATERBODY	ACREAGE OF WATER BODIES BY TYPE			
	Cache County	Federal	State	Private
Lake/Pond	4,836	225	462	4,149
Reservoir	442	0	0	442
Swamp/Marsh	2,800	12	24	2,764
Playa	128	0	0	128
Totals	8,206	237	486	7,483

Source: US Geological Survey, National Hydrological Dataset, Lakes.

24.1.3 Legal Context

Water quality and hydrology each have specific laws and regulations related to the resources.

Applicable Laws

Water quality. With respect to water quality, the DWQ is responsible for maintaining water quality in Utah. Water quality is regulated by the DWQ based on the source of pollutants entering waterways, defined as either point source or nonpoint source pollution.

Point source pollution. Point source pollution originates from a distinct business, operation, or other specific location. Point source pollutants are highly regulated under the Clean Water Act (Federal Water Pollution Control Act) (33 USC §1251 et seq. [1972]) and Utah Water Quality Act (Utah Code §19-5) through the issuance of permits and possible fines if permit requirements are not met. The EPA issues discharge permits within the National Pollutant Discharge Elimination System. In Utah, the State was granted primacy by EPA to manage the NPDES permitting program as the Utah Pollution Discharge and Elimination System and is operated by the DWQ.

The NPDES permits are required for all point sources listed above. The Clean Water Act explicitly excludes agricultural runoff and irrigation return flow as point source pollution and, therefore, do not require NPDES permits.

Nonpoint source pollution. Nonpoint source pollution originates from a variety of dispersed sources, such as parking lots, roads, residential landscaping, agricultural operations, stream bank erosion, and fire scars. Once mobilized, these pollutants enter streams, waterbodies, wetlands, and groundwater. Because of its complex nature, nonpoint source pollution is not regulated through permitting under the Clean Water Act. Instead, nonpoint source pollution is managed in Utah by the DWQ through voluntary and incentivized actions of individual landowners. The Utah Water Quality Act (Utah Code §19-5) requires states to prepare nonpoint source pollution assessment reports and include provisions for federal funding for implementing nonpoint source management.[2] In some cases local governments have established development codes to compel actions to reduce nonpoint source pollution.

Due to the diffuse nature of nonpoint source pollution, the DWQ uses water-quality data in streams and lakes to determine levels of pollution within a watershed. The DWQ collects water quality monitoring data to determine if a waterbody supports its designated beneficial uses and meets water quality standards.

A statewide assessment report, called the Integrated Report, is produced by the DWQ every other year. This report summarizes overall surface water conditions, estimates the importance of key water quality concerns, identifies impaired waterbodies, and helps agencies prioritize resource needs.[3] This report

also helps in the development of TMDLs, which is a calculation of the maximum amount of a pollutant that a waterbody can have while still meeting water quality standards and is required for impaired waterbodies. Data for assessed waters in Utah is public and can be found in the Utah Environmental Interactive Map application. Water quality data is divided by waters with no impairments, waters with no evidence of impairment, waters with insufficient data, impaired waters with a Total Maximum Daily Loads, and impaired waters that need a Total Maximum Daily Loads.

Hydrology. Title 73 (Water and Irrigation) of Utah Code provides the majority of legal framework for water use and management in Cache County. The appropriation of water from the rivers, lakes, and wells is regulated by the Utah Division of Water Rights and Utah Code §73-2-1.1. More information on water rights can be found in this document under CRMP Section 25, Water Rights.

24.2 Desired Future State

Cache County desires to maintain and/or improve watersheds and water quality to maintain public water supply and provide stable and productive riparian and aquatic ecosystems and groundwater resources on public lands. As a related matter, Cache County desires to reduce pollutant loads entering waterways to improve water quality. Cache County also desires to coordinate activities among various local, state, and federal agencies and organizations to protect water quality across the county.

24.3 Management Objectives and Associated Policies and Guidelines

24.3.1 Management Objective

Proactively address water quality needs in watersheds across Cache County.

Policies and Guidelines

a. Encourage continued monitoring by the DWQ to ensure that the public water supply remains at its current service level and is not adversely affected by new development.

b. Support activities that implement strategies to protect wetlands, riparian areas, and stream bank stability to prevent degradation from erosion and sediment transport to protect water quality, habitat, and hydrologic functions.

c. Support activities which increase stream corridor and watershed recharge area preservation to improve habitat, social, recreational, and water use functions.

d. Seek out funding opportunities and grants from non-governmental, state, and federal organizations.

24.3.2 Management Objective

Coordinate management objectives and activities across the various jurisdictions, agencies, departments, and organizations that work on water quality issues in Cache County.

Policies and Guidelines

a. Encourage coordination between the various entities that have any effect on culinary water.

24.4 References

[1] Utah Department of Environmental Quality, Utah Division of Water Quality. 2014. Nonpoint Source Management Plan for Abandoned Mines in Utah. https://deq.utah.gov/ProgramsServices/programs/water/nps/docs/2012/02Feb/Abandoned_Mine_NPS_Feb272012.pdf (accessed March 23, 2017).

[2] Utah Department of Environmental Quality, Utah Division of Water Quality. 2014. Integrated Report: Assessment Methods. https://deq.utah.gov/ProgramsServices/programs/water/wqmanagement/assessment/docs/2014/10Oct/Chapter2AssessmentMethodsv2.pdf (accessed March 23, 2017).

[3] Utah Department of Environmental Quality, Utah Division of Water Quality. 2013. Utah Statewide Nonpoint Source Pollution Management Plan. http://www.deq.utah.gov/ProgramsServices/programs/water/nps/mgmtplan2013/docs/2014/06Jun/2013_Utah_Statewide_NPS_Management_Plan.pdf (accessed March 23, 2017).

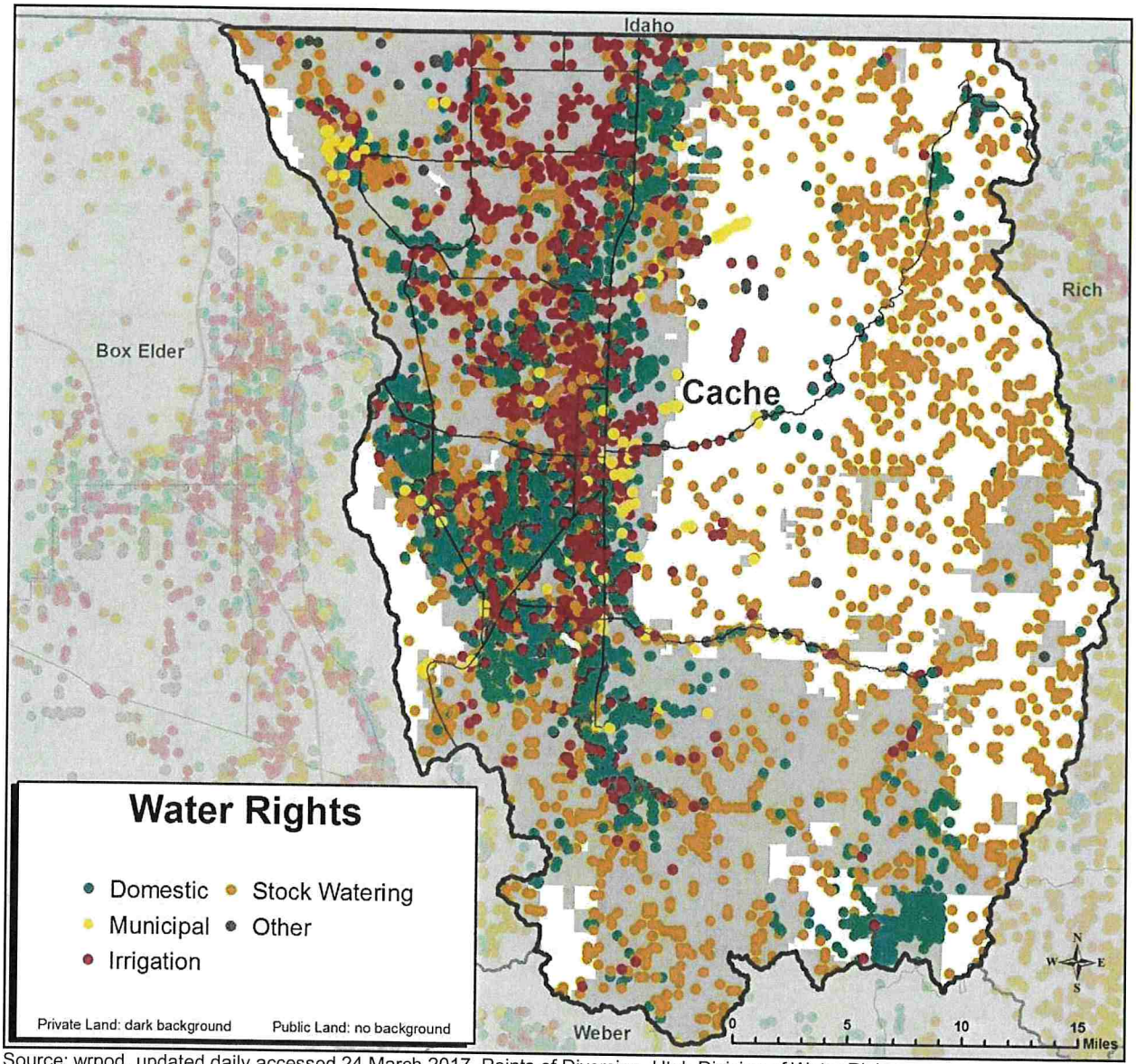
[4] Cirrus Ecological Solutions, LC. & Logan Simpson Design, Inc. 2013. West Box Elder Coordinated Resource Management Plan. http://utahcbcp.org/files/uploads/boxelder/WBECRMPlanJan2013.pdf, (accessed April, 14, 2017).

25. WATER RIGHTS

Water is a renewable natural resource, available in finite supply, and subject to competition between stakeholders as annual supplies vary. The demand to supply water to Utah's various interests is expected to be a continually complex issue for stakeholders to coordinate. Water resources are a natural system resulting from a fluctuating cycle of precipitation and subsequent absorption into the earth and/or the drainage of water from high elevations to lower elevations. The network of flowing water, both above and below the earth's surface, extends beyond obvious topographic or political boundaries. As a result, management and use of water supplies requires coordination between the various jurisdictions of local, state, and federal entities

Related resources:

- Ditches and Canals
- Irrigation
- Water Quality and Hydrology



Source: wrpod, updated daily accessed 24 March 2017, Points of Diversion, Utah Division of Water Rights.

25.1 Management Setting

25.1.1 Context

All waters in Utah, excluding rainwater[1], are owned by the State of Utah in trust for its citizens. The right to use water is controlled by the Utah Division of Water Rights (DWRi) through the legal allocation of water rights. Cache County supports protection of existing water rights and reasonable development of additional water rights.

In-stream flows benefit aquatic habitats, wetlands, and riparian areas and many sensitive species are dependent on those habitats.

25.1.2 Findings

Appropriation, Beneficial Use, and Transfers

Utah's extensive arable lands significantly exceed the water supply provided by Utah's arid climate. The disparity in the ratio between available land and available water necessitated the establishment of legal framework through which available water is allocated. The legal identification of who possesses the right to use available water, where it's taken from, where it's used, how much, in what priority, and for which specific purpose(s) is called an "appropriation." Point of diversion data, Stream Alteration data, Place of Use data, and Adjudication Areas data can be used by the county to help determine areas of the county that may have complex water rights issues. Table 25.1 and 25.2 provide a summary of water right appropriations for all lands in Cache County. The purpose for which the allotted water is legally intended is called the beneficial use. Common beneficial uses include irrigation, stock watering, municipal, industrial, electric power generation, and mining.

Table 25.1. All water points of diversion throughout Cache County, approved, perfected, terminated, and unapproved.

WATER POINT DIVERSION	CACHE COUNTY (TOTAL)	FEDERAL	STATE	PRIVATE
Abandoned well	136	0	3	133
Drain	87	0	0	87
Point to point	3,557	1,011	132	2,414
Re-diversion	517	6	2	509
Return	34	2	1	31
Spring	171	23	0	148
Surface	3,233	92	66	3,075
Underground	5,220	12	34	5,174
Totals	12,955	1,146	238	11,571

Source: Utah Division of Water Rights, wrpod.shp

Table 25.2. Municipal water suppliers in Cache County and their acreage

WATER SUPPLIER	ACRES
Amalga Municipal Water System	2,268
Benson Water Culinary District	8,765
Clarkston Municipal Water System	732
Cornish Municipal Water System	3,011
Goaslind Spring Water Works Company	108
High Creek Culinary Water System	718
Hyde Park Culinary Water System	1,966
Hyrum City Water System	2,471
Lewiston Culinary Water System	15,493
Logan City Water System	9,652
Mendon Culinary Water System	916
Millville City Water	1,671
Newton Town Water	606
Nibley City	1,511
North Logan Culinary System	4,387
Paradise Town	774
Providence City Water Corporation	1,790
Richmond City	1,889
River Heights City Water System	384
Riverside Culinary Water Company	462
Smithfield Municipal Water System	2,759
South Cove Water Supply	151
Trenton City	4,664
Wellsville City	4,730
Willow Creek	85

Source: Utah Division of Water Rights, muni.shp

The ownership of a right to use water identified by appropriation is called a "water right." State law classifies water rights as "real property," which can be held by an entity or individual and may be bought and sold. A water right is tied to a specific source (defined as a "diversion"). Irrigation water rights are tied to a quantified acreage of land and must be continually used for the purpose for which it was appropriated, which is defined as beneficial use. With some limitations, water rights may be rented or sold to other users, subsequent to DWRi approval, and provided that the transfer of water rights does not affect other relevant water users. With some limitations, water rights for a certain beneficial use may be held in lieu of a different beneficial use subsequent to the DWRi approval and an appropriate exchange can be accounted for by DWRi. Similarly, with some limitations, the use of water rights from a specific diversion may be transferred to the use of water from another diversion, subsequent to the DWRi approval and an appropriate exchange rate can be accounted for by DWRi.[2] Water rights are subject to available supply, so ownership of a water right may not necessarily guarantee that the user receives a specific predefined volume of water. Additionally, not all water rights possess an equal standing when annual water allocations are reduced due to availability.

The laws in the State of Utah governing the statewide administration of water rights are based on the principles of a legal doctrine known as "Prior Appropriations." The Prior Appropriations Doctrine establishes the ranking of a water rights priority based on the chronologic establishment of the original beneficial use, making older water rights senior to newer water rights. In other words, all water rights are not created equal. As available water supply diminishes at any given diversion, a junior water right holder may have to yield remaining water supply to the holder of a more senior water right.

The source of the water may be a determining factor identifying which beneficial use may be applied. Drinking water often comes from wells where little or no treatment is required, while irrigation water often comes from rivers because irrigation water does not typically need to be treated. Water appropriated for irrigating farmland must be used only for irrigation until (and if) approval to change the use can be obtained from the DWRi. Similarly, irrigating farmland from a culinary well is not legal unless approval has been obtained from DWRi. Additionally, failure to actively maintain beneficial use may result in the forfeiture of the water right.

Depletion

Whether it is used for drinking or irrigating corn, water rights are typically quantified as a gross volume of flow and represent the maximum amount of water a water rights holder is entitled to divert from a common supply. However, it is a common misconception that the water rights holder owns that water, or that all the water diverted is taken out of circulation. Because of the cyclical nature of how finite water supplies become available to users, ownership of a water right entitles the owner to only the single annual beneficial use for which the right was appropriated. Water right ownership entitles the holder to divert a given volume of flow (if both available supply and water right seniority allow) and apply that diverted water to the beneficial use. However, after the use of the water has been applied, the water must then be released downstream to the next user. Water rights are quantified at the diversion point because there is no reliable way to accurately measure water returned to the system after all the various beneficial uses.

"Depletion" is the term defining the actual net water volume a user takes from a given diversion point, removing it from the system and rendering it unavailable for reuse by downstream users. A water right is more accurately described as the right to an estimated amount of depletion. The estimated amount of depletion is approximated based on known rates of water that are lost to the system for a particular use, which is why water rights are tied to a specific beneficial use.

As water supplies fluctuate from year to year, any water right is subject to available supply. The State of Utah follows the prior appropriation system, which grants priority water rights to whoever has documented the earliest beneficial use of water.

Diversions can be any drilled or dug well, gate, valve, dam, or pump that takes water from a natural stream channel or groundwater. The DWRi maintains records of all water wells, storage dams, and diversions, as well as places of use, and municipal water suppliers. However, many water rights holders in Utah are entities that function for a collective set of water shareholders. Shareholders own a portion of water right(s) which is administered by the water right holder. This is usually the case within irrigation districts or ditch companies. The DWRi does not necessarily possess records of individual shareholders because those records are held by the entity owning the water right on behalf of the shareholders. Changes to any water rights may be applied for by filing an application to the DWRi. The DWRi and the Utah Division of Natural Resources are both held by appointees of the governor, accountable to the governor, subject to state legislative action, and tasked with administering all state and federal water rights within Utah.

25.1.3 Legal Context

Utah's water, including rivers, lakes, and groundwater is regulated under Utah Code Title 73-1et seq., Water and Irrigation, and is subject to additional legal settlements, rulings, and treaties, which also play significant roles in determining how water is allocated to users in the western United States.[1] Utah Code Utah Code §73-1-1 declares all water, above and below ground, is property of the public and shall be governed by the Legislature for "beneficial purposes". Utah Code §73-2-1 creates a state engineer with responsibility "for the general administrative supervision of the waters of the state and the measurement, appropriation, apportionment, and distribution of those waters." Subsection 1.1 created the DWRi within the DNR with authority over water rights in Utah. Utah Code 73-3-1 et seq. addresses the appropriation of water rights, methods for obtaining and defending rights, etc.

Another section of state code applicable to water, and especially to municipalities, includes Utah Code §10-8-15 which provides extraterritorial jurisdictional authority for municipalities to enact ordinances with effects outside of official city boundaries for purposes of "preventing pollution or contamination of the streams or watercourses." Under this law, cities of the first class may enact ordinances covering all lands within watersheds that provide domestic or culinary water. Cities of other classes may enact ordinances effective "15 miles above the point from which it is taken and for a distance of 300 feet on each side of such stream." Utah Code §10-8-18 give municipalities the authority to acquire water sources to provide water for the city and its' inhabitants, including the right to purchase land, purchase and lease water sources, and purchase, lease or form water companies.

25.2 Desired Future State

Cache County desires to preserve and enhance in-stream flows on public lands for the benefit of aquatic habitats and sensitive species; while recognizing existing water rights.

As a political subdivision of the State, Cache County has a legitimate interest in seeing that all reasonable steps are taken to preserve, maintain, and enhance water resources for the public.

25.3 Management Objectives and Associated Policies and Guidelines

25.3.1 Management Objective

Maintain water in streams, lakes, and wetlands of adequate quantity and quality to provide for in-stream flows and existing downstream uses including support of healthy riparian and aquatic habitats, stability and effective function of stream channels, ability to route flood discharges, and to maintain recreation opportunities.

Policies and Guidelines

a. Support requirement of in-stream flow determinations on special-use permits that have the potential to impact streams.

b. Support the acquisition and conversion of water rights for in-stream flows. Work with the Department of Water Rights, as necessary, to modify water right beneficial use to allow in-stream flows.

c. Coordinate with public land management agencies to acquire and protect water rights for use on

public land and maintain them with the State Water Engineer.

25.4 References

[1] Utah Division of Water Rights. n.d. Frequently Asked Questions Website. http://www.waterrights.utah.gov/wrinfo/faq.asp (accessed February 2, 2016).

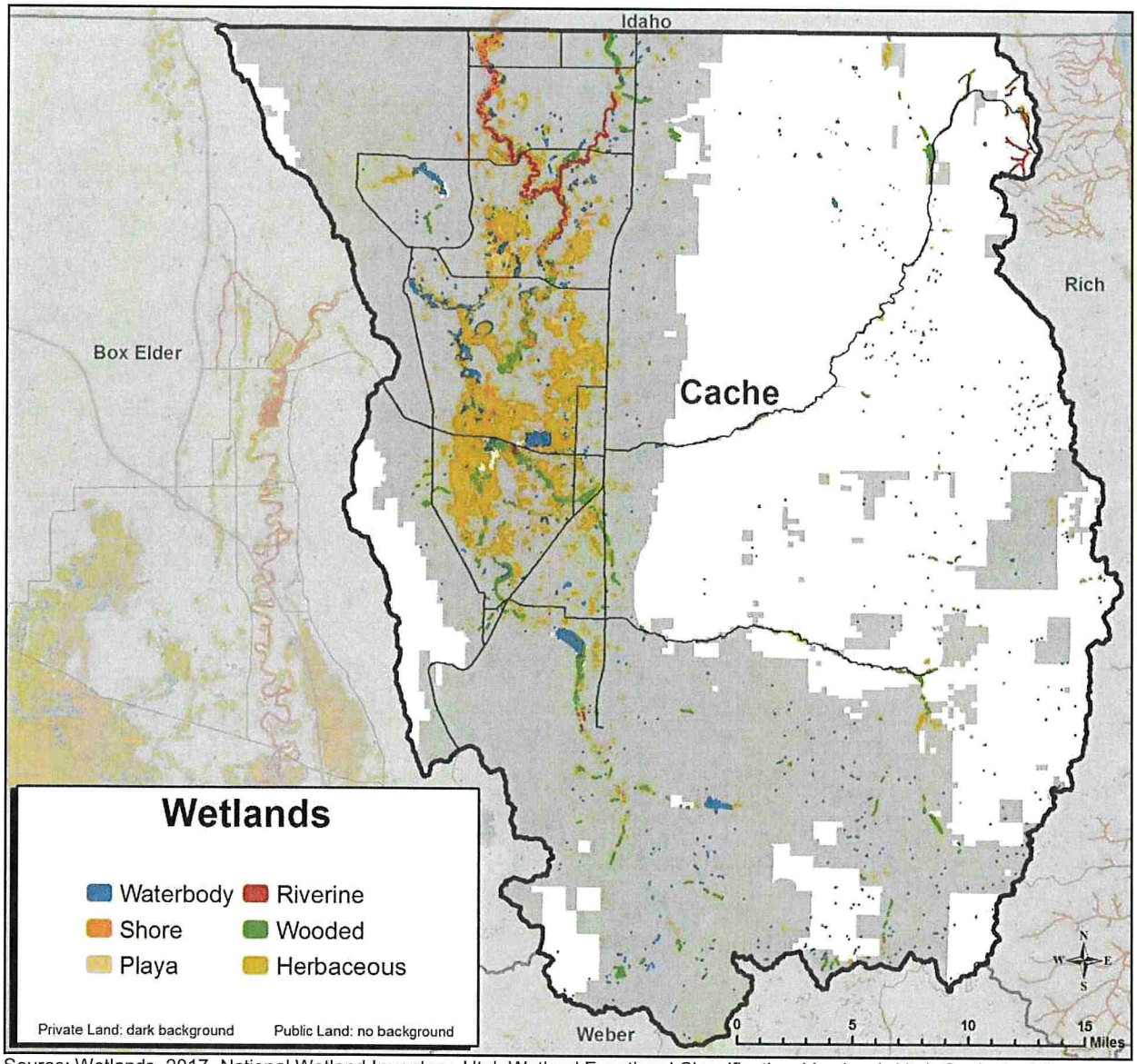
[2] Utah Department of Natural Resources. 2013. Study of Issues Related to State Jurisdiction Over Water Rights. http://www.waterrights.utah.gov/wrinfo/Brochures/state_jurisdiction_over_water_rights.pdf (accessed March 23, 2017).

26. WETLANDS

Wetlands have been defined in different ways by numerous entities and agencies. However, the US Army Corps Engineers (USACE) and the Environmental Protection Agency (EPA) jointly define wetlands as: "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that do under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[1] This definition of wetlands is perhaps the most relevant to local land planners because the USACE and the EPA are the agencies that have legal jurisdiction over wetlands, including wetlands on private property. Wetlands provide numerous benefits to society but a few of the most important of these include wildlife habitat area, hydrologic recharge areas, and water quality improvements.

Related resources:

- Floodplains and River Terraces
- Riparian Areas
- Water Quality and Hydrology



Source: Wetlands, 2017, National Wetland Inventory, Utah Wetland Functional Classification: Version 1, Utah Geological Survey.

26.1 Management Setting

26.1.1 Context

Wetlands are highly productive ecosystems providing habitat for a wide assortment of wildlife, including sensitive species. Wetlands are also a critical component to a functioning hydrological system having the ability to improve water quality by filtering out pollutants. In addition, wetlands can lessen the effects of flooding by storing water and releasing it slowly with the potential to help replenish aquifers.

Wetlands are a critical component to Cache County's functioning hydrological system. Responsible stewardship of these resources while supporting current industries will provide lasting benefit to Cache County's people and wildlife.

26.1.2 Findings

Table 26.1 shows wetland acreage in Cache County by type and ownership status.

Table 26.1. Wetland acreage by type and ownership status within Cache County.

WETLAND TYPE	ACRES			
	Cache County	Federal	State	Private
Herbaceous	10,924	86	83	10,755
Playa	444	0	0	444
Riverine	434	13	1	420
Shore	563	3	2	558
Waterbody	5,956	252	445	5,259
Wooded	1,933	208	207	1,518
Totals	20,254	562	738	18,954

Source: US Fish and Wildlife Service's National Wetland Inventory with additional data from US Forest Service, Utah Geological Survey, and Utah Automated Geographic Reference Center.

26.1.3 Legal Context

Applicable Laws

All jurisdictional waters and wetlands, regardless of ownership, are regulated by the EPA and USACE under Section 404 (Permits for Dredged or Fill Material) of the Clean Water Act (33 USC §1344 et seq.). Activities that involve excavation or placement of fill in jurisdictional waters or wetlands require a permit issued by the USACE and may be reviewed by EPA. The extent of jurisdiction is determined on a project-by-project basis, in consultation with the USACE.

26.2 Desired Future State

Cache County desires to maintain and improve wetlands found on public lands, or mitigate impacts where infrastructure is needed for the benefit of its watershed, water quality, and wildlife habitat.

26.3 Management Objectives and Associated Policies and Guidelines

26.3.1 Management Objective

Maintain and improve wetlands on public lands.

Policies and Guidelines

a. Support the increase of cover and extent of riparian vegetation by restoring beavers on the landscape, where social and environmental factors permit (according to the Beaver Restoration Assessment Tool).

b. Where possible and practical, encourage restoration of wetlands that have been eliminated or degraded. The EPA provides guidelines to wetland restoration.[1]

c. Encourage maintenance and/or restoration of natural timing and variability of water table elevation in spring sources, meadows and wetland areas.

d. Support public education programs on the importance of wetlands, property value improvements provided by managed open spaces including wetlands, and develop land management partnerships that include landowners.

e. Foster collaboration between research and management entities, including Utah Department of Wildlife Resources, Utah Department of Water Quality, US Fish and Wildlife Service, and Utah Geological Survey, on future assessment and mapping of wetlands.[2]

f. Support maintenance and/or restoration of diversity, productivity, vigor, and regenerative capacity of native and desired nonnative riparian and wetland plant communities to provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems; support adequate summer and winter thermal regulation; and to help achieve rates of surface erosion and channel migration characteristic of those under which desired communities develop.[3]

g. Encourage protection of existing wetlands from activities which may fill, degrade, or alter vegetation.

26.3.2 Management Objective

Support efforts to acquire water rights for environmental flows.

Policies and Guidelines

a. Support the acquisition and conversion of water rights for in-stream flows. Work with the Utah Division of Water Rights, as necessary, to modify water right beneficial use to allow in-stream flows and for specific areas of ecological importance such as wetlands.

b. Support implementation of laws and policies for a broader array of agencies or conservation organizations to hold in-stream water rights for the benefit of aquatic habitats.

26.4 References

[1] US Environmental Protection Agency. 2017. Wetlands Protection and Restoration Website. https://www.epa.gov/wetlands (accessed March 23, 2017).

[2] Utah Department of Natural Resources, Forestry, Fire and State Lands. 2013. Final Comprehensive Management Plan and Record of Decision. http://forestry.utah.gov/images/statelands/greatsaltlake/2010Plan/OnlineGSL-CMPandROD-March2013.pdf (accessed March 23, 2017)

[3] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (accessed March 23, 2017).

27. WILD AND SCENIC RIVERS

The Wild and Scenic Rivers (WSR) designation is reserved for free-flowing waterways that exhibit "outstandingly remarkable" value (e.g. scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar value). For this purpose, "free-flowing" is defined as a river section that is flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. Rivers with this designation are protected within the WSR system for the enjoyment of present and future generations.[1]

Related resources:

- Wilderness
- Recreation and Tourism
- Land Use

27.1 Management Setting

27.1.1 Context

Cache County currently does not have any rivers officially designated as WSR. Neither does the county have any river segments recommended for inclusion in the National Wild and Scenic Rivers system. A 2008 Forest Plan Amendment removed all the Cache River Segments from WSR recommendation that had previously been recommended in the 2003 Revised Forest Plan.[2,3]

27.1.2 Findings

Wild and Scenic Rivers are designated by acts of Congress after federal land managers recommend specific river or stream segments for designation. Water courses that are determined to have WSR characteristics are designated as eligible during land use planning procedures. The National Environmental Policy Act (NEPA) process is followed to assess potential impacts of land use decisions, including WSR designation. Plans are adopted after consultation with local governments, residents, Native American Tribes and other interested parties. Proposed WSR are then managed as default WSR until Congress either designates the water course as WSR or returns them to the agency for other management purposes.

27.1.3 Legal Context

Applicable Laws

The Wild and Scenic Rivers Act of 1968 (16 USC §1271 et seq.) provides the legal framework and criteria for designation of streams and river segments as WSR. Eligible water courses are recommended for designation by federal land managers after a determination is made through planning procedures included in the NEPA (42 USC §4321 et seq. [1969]) as well as land and resource planning documents. The Forest Service planning procedures are detailed in the National Forest Management Act (16 USC §1600 et seq. [1976]), while the US Bureau of Land Management follows the Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]).

27.2 Desired Future State

Cache County does not have any recommended WSR segments.[2,3]

27.3 References

[1] National Wild and Scenic Rivers System. n.d. About the WSR Act. Accessed: 1/21/16.

[2] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (accessed March 23, 2017).

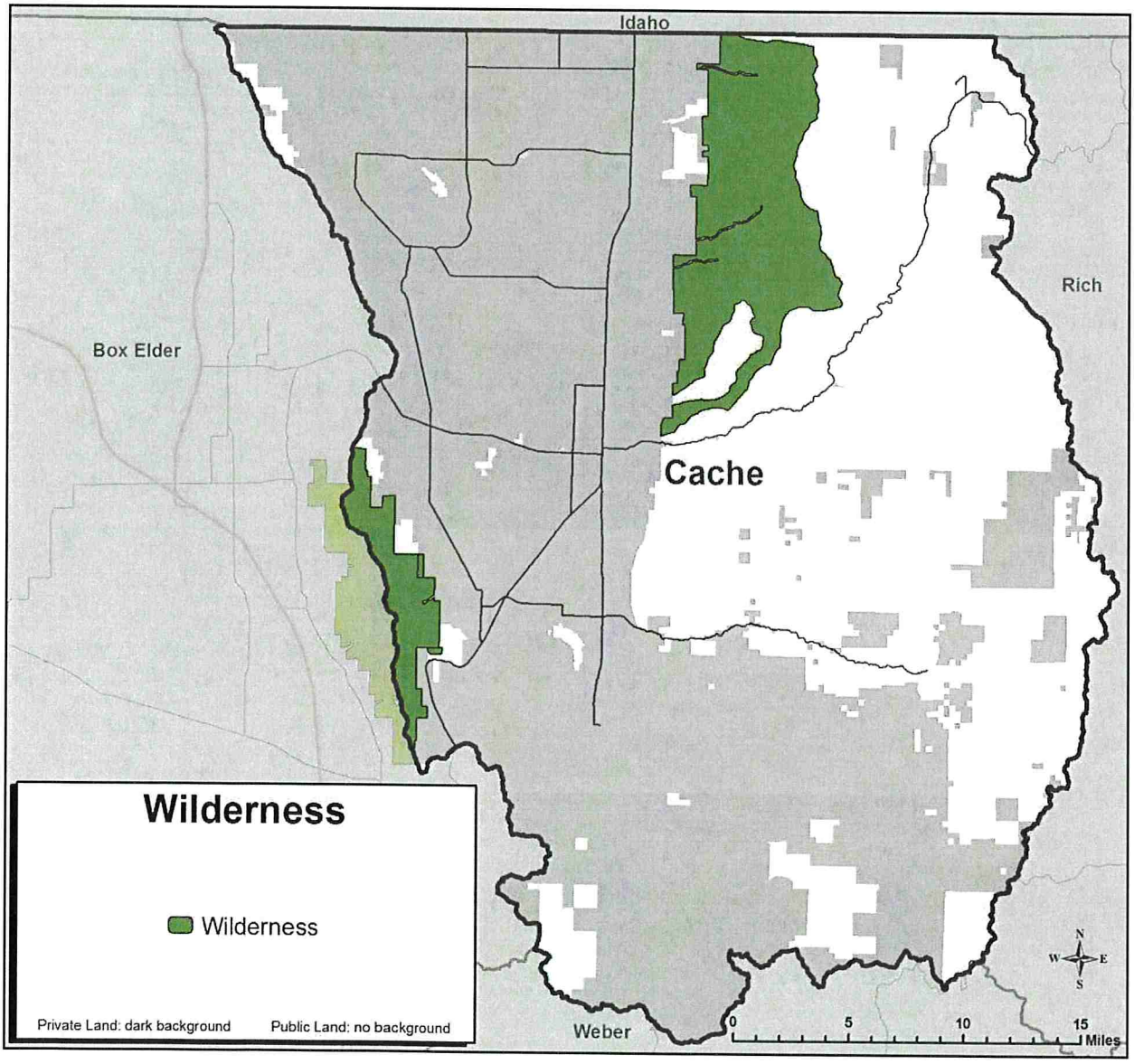
[3] US Forest Service. 2008. Revised Forest Plan for the Wasatch-Cache National Forest, Amendment Number 5.

28. WILDERNESS

The term "wilderness" is an administrative designation created under the Wilderness Act of 1964 and is applied to specific parcels of public lands. The wilderness designation enables preservation and protection of "Federal lands retaining primeval character and influence" and as such severely limits consumptive and motorized uses. A second component of this discussion has to do with lands under other special designations besides official wilderness areas, which also significantly restrict the types of allowable uses. The US Forest Service (Forest Service) special management classes include Research Natural Areas, Wild and Scenic Rivers, Roadless Areas, and Recommended Wilderness Areas.

Related resources:

- Wild and Scenic Rivers
- Land Use



Source: USFS Wilderness Areas and USFS Roadless Inventory, Date unknown, US Forest Service.
Wilderness_BLM98ReInventory, 1998, Bureau of Land Management. Access via Utah Automated Geographic Reference Center.

28.1 Management Setting

28.1.1 Context

Wilderness areas are designated by the US Congress after land managers recommend specific areas for designation. Lands that appear to qualify as wilderness are designated as Recommended Wilderness areas by the Forest Service through Forest Plans developed following the National Environmental Policy Act (NEPA) process. The NEPA process is followed to assess potential impacts of land use decisions, including Wilderness designation. Plans are adopted after consultation with local governments, residents, Native American tribes and other interested parties. Proposed Wilderness and Wilderness Study Areas are then managed as wilderness until Congress either designates the Wilderness Study Areas as wilderness or returns the land to the agency for other management purposes. Other protective land use designations, such as Roadless Areas are management designations implemented through Forest Plans.

28.1.2 Findings

The Wellsville Mountain and Mount Naomi Wilderness areas in Cache County provide primitive backcountry opportunities for residents and visitors. Wilderness areas also protect watersheds and water quality for drinking water supplies.

Table 28.1. Designated Forest Service Wilderness in Cache County.[1]

WILDERNESS AREA	ACRES
Mount Naomi	43,983
Wellsville Mountain	10,968

Source: SITLA land ownership spatial database.

28.1.3 Legal Context

Applicable Laws

The Wilderness Act of 1964 (16 USC §1131 et seq.) provides the legal framework and criteria for Wilderness designation. Wilderness areas are recommended for designation by federal lands managers after a determination is made through planning procedures spelled out in the National Environmental Policy Act (42 USC §4321 et seq. [1969]) as well as land and resource planning documents. The Forest Service planning procedures are spelled out in the National Forest Management Act (16 USC §1600 et seq. [1976]).

The state enacted the Utah Wilderness Act of 2014 (Utah Code §63L-7-101 et seq.) to provide a wilderness designation option for state-owned lands.

28.2 Desired Future State

Cache County supports the current distribution of wilderness in its boundaries, and desires to provide a range of recreation opportunities on public lands; primitive backcountry Wilderness experiences are only one of many recreation demands placed on public lands by residents and visitors.

28.3 Management Objectives and Associated Policies and Guidelines

28.3.1 Management Objective

Support active and open communication among various federal, state, tribal, and local land use authorities during recommendation and study processes regarding Wilderness, especially during Forest Plan revisions.

Policies and Guidelines

a. Develop and direct land management decisions related to Wilderness, wilderness study areas, roadless areas, and other special designations to be advantageous to the county.

28.3.2 Management Objective

Participate in land management decisions related to wilderness, wilderness study areas, roadless areas, and other special designations.

Policies and Guidelines

a. Coordinate involvement from a broad range of stakeholders during land use decisions regarding Wilderness, including local governments and landowners.

b. Engage recreation users in wilderness areas when developing strategies for management of the lands.

28.3.3 Management Objective

Support enforcement of rules and regulations regarding allowed activities in wilderness and proper behavior in the backcountry

Policies and Guidelines

a. Encourage engagement of wilderness recreational users at trailheads and in wilderness areas to enforce rules and reinforce proper wilderness etiquette.

b. Support public education efforts on the allowed recreation activities and the benefit of wilderness areas to watershed health.

28.4 References

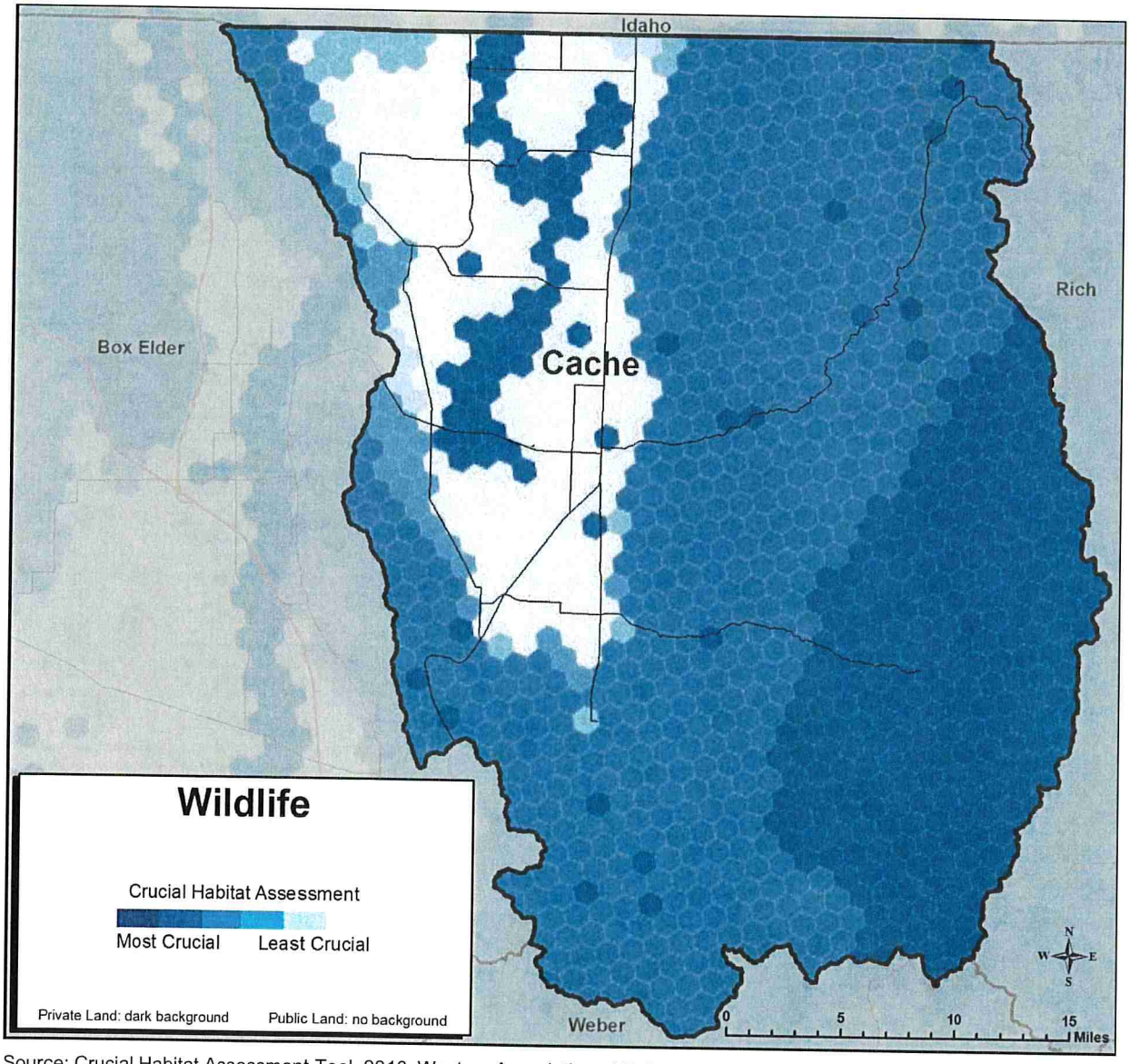
[1] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (accessed March 23, 2017).

29. WILDLIFE

Wildlife is the population of undomesticated animals living in a natural environment, including both game and nongame species. In Utah "wildlife" includes vertebrate animals (fish, amphibians, reptiles, birds, mammals) as well as brine shrimp, crayfish, and mollusks. This section does not specifically address sensitive species (see Section 22, Threatened and Endangered Species) or aquatic wildlife (see Section 8, Fisheries).

Related resources:

- Threatened and Endangered Species
- Fisheries
- Predator Control



Source: Crucial Habitat Assessment Tool, 2013, Western Association of Fish and Wildlife Agencies.

29.1 Management Setting

29.1.1 Context

Cache County enjoys a diverse and abundant wildlife population, which contributes to a productive natural environment. Wildlife also yield important social and economic resources including recreational opportunities such as photography, wildlife observation, and hunting.

Wildlife populations are managed by the Utah Department of Wildlife Resources (DWR) under policies and guidelines of the State Wildlife Board and Regional Advisory Councils. Growing populations of wild turkeys that damage private property and elk that compete for forage are of concern within the county.

29.1.2 Findings

The DWR is the wildlife authority for the state and all wildlife found in Utah are considered property of the State (Utah Code 17-13-3). It is the DWR's responsibility to protect, propagate, manage, conserve, and distribute protected wildlife throughout the state regardless of land ownership and jurisdiction. Assisting the DWR in decision making and establishing management priorities is the state Wildlife Board and five Regional Advisory Councils that provide local input on wildlife related issues. Each Regional Advisory Councils consists of a diverse group of interest group representatives, including agriculture, sportsmen, federal land agencies, general public, and elected officials.

The DWR has published management plans for mule deer, elk, moose, bighorn sheep, black bear, beaver, northern river otter, bobcat, wild turkey, and greater sage grouse. Utah's Wildlife Action Plan considers key habitats and provides management strategies to improve the habitat's condition (see pages 73–123). Also, the plan considers threats and provides actions to reduce the threats (see pages 124–216).[1] Habitat for wildlife crosses jurisdictional boundaries and is best managed by cooperative means. Table 29.1 shows the generalized ranking of habitat in the county and its distribution between public (several agencies) and private lands.

Federal land managers must consider wildlife and their habitats in Forest Plans (for the US Forest Service) as well as during National Environmental Policy Act (NEPA) analysis.

Table 29.1. Acres and Percentages of Generalized and Ranked Crucial Wildlife Habitat.

GENERALIZED HABITAT		CACHE COUNTY		FEDERAL		STATE		PRIVATE	
Rank		Acres	%	Acres	%	Acres	%	Acres	%
Most Crucial Habitat	1	207,973	28	82,277	29	20,928	55	104,768	25
	2	378,500	50	203,431	71	16,306	43	158,763	37
	3	16,441	2	276	0	183	0	15,982	4
	4	11,982	2	0	0	0	0	11,982	3
	5	2,315	0	0	0	0	0	2,315	1
Least Crucial Habitat	6	133,367	18	354	0	634	2	132,379	31

Source: Crucial Habitat Assessment Tool, 2013, Western Association of Fish and Wildlife Agencies.

29.1.3 Legal Context

Cache County recognizes the authority of the DWR and the Wildlife Board and Regional Advisory Councils (RACs) in managing the wildlife in the county.

Applicable Laws

All naturally occurring wildlife in Utah are considered property of the state (Utah Code §23-13-3). Utah Code §23-14-1 gives the power to manage wildlife to the DWR. Utah Code §23-15-2 establishes that the state has jurisdiction of all wildlife in the state, including aquatic wildlife, whether on public or private land. Utah Code §4-23-2 declares that preserving the wildlife resources of the state is important to the economy of the state. Utah Code §23-14-2.6 establishes RACs who advise the state Wildlife Board regarding wildlife management issues.

29.2 Desired Future State

Cache County desires to maintain healthy native wildlife populations. The county also desires to protect and enhance natural landscapes, ecosystems, and the biodiversity of the county to support healthy wildlife populations. Cache County desires to take an active role in the RACs and communicate and advocate for county goals for wildlife.

29.3 Management Objectives and Associated Policies and Guidelines

29.3.1 Management Objective

Support land management actions that keep native species off the Endangered Species List. Provide for sustained diversity of species at the genetic, population, community, and ecosystem levels. Maintain communities within their historic range of variation that sustains habitats for viable populations of species.

Policies and Guidelines

a. Support public education programs that promote water conservation, wildfire prevention, and wildlife habitat.

b. Support management objectives to reduce future fragmentation of intact habitats. Provide connectivity in fragmented habitats and between habitats to promote genetic diversity in wildlife populations.

c. Support public land manager cooperation with the DWR to manage wildlife populations.

d. Support agency coordination to provide adequate big game winter range habitat to reduce urban conflicts.

29.3.2 Management Objective

Support maintenance and improvement of existing aquatic habitats, including riparian and wetland habitat.

Policies and Guidelines

a. Support best management practices in riparian areas including managed grazing and weed control in riparian areas.[2]

b. Support the acquisition and conversion of water rights for in-stream flows. Work with the Department of Water Rights as necessary to modify beneficial use of water rights to allow in-stream flows.

29.3.3 Management Objective

Support active management of vegetation (e.g., weed removal and treatment) to reduce components or factors that promote risk of catastrophic fire, such as cheatgrass or excessive conifer encroachment. Support management actions to reduce potential for insect epidemics.

Policies and Guidelines

a. Support fuel reduction strategies including vegetation treatments, silvicultural actions, prescribed fire, prescriptive grazing, and weed control.[3]

b. Support vegetation management that focuses on approximating natural disturbances and processes by restoring composition, age-class diversity, patch sizes, and patterns for all vegetation types.

29.3.4 Management Objective

Coordinate with Utah Division of Natural Resources and the Utah Department of Transportation to reduce wildlife vehicle collisions on Cache County roadways.

Policies and Guidelines

a. Support development of wildlife crossing structures to provide safe passage of roads or other movement barriers.[1] Support other mitigation projects that aim to mitigate wildlife vehicle collisions.

29.4 References

[1] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah Wildlife Action Plan, Draft Version 6-4-2015. https://wildlife.utah.gov/wap/wap2015draft.pdf (accessed March 14, 2017).

[2] Sheley et.al. 1995. Managing Riparian Weeds. Rangelands 17(2). https://journals.uair.arizona.edu/index.php/rangelands/article/viewFile/11260/10533. (Accessed March 14, 2017).

[3] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (Accessed March 23, 2017).

30. CACHE COUNTY PLANNING DOCUMENTS

Over the years, numerous entities have participated in planning efforts related to the resource topics included in this CRMP. The following is a list of other planning documents that have been reviewed in preparation of the CRMP. Ongoing coordination will be necessary to continue to define and achieve shared objectives.

Cache County. 1998. Countywide Comprehensive Plan. 346p.

Natural Resources Conservation Service, U.S. Department of Agriculture. 2005. Cache County Resource Assessment. 25 p.

School and Institutional Trust Lands Administration (SITLA). 2012. TITLE R850. SCHOOL AND INSTITUTIONAL TRUST LANDS, ADMINISTRATION. effective October 1, 2015

State of Utah. 2013. Conservation Plan for Greater Sage-grouse in Utah, February 14. 80p.

United States Department of the Interior, Bureau of Land Management. Decision Document for the Isolated Tract Planning Analysis Bear River Resource Area and Pony Express Resource Area. 61p.

Utah Department of Natural Resources. 2013. Study of Issues Related to State Jurisdiction Over Water Rights.

Utah Division of Wildlife Resources. 2009. Utah Aquatic Invasive Management

Plan. Utah Division of Wildlife Resources and the Cougar Advisory Group. 2015.

Utah Cougar
Management Plan V. 3 2015 - 2025. 41p.

Utah Division of Wildlife Resources. 2014. Utah Mule Deer Statewide Management Plan, Department of Natural Resources, Utah Division of Wildlife Resources, 38p.

Utah Division of Wildlife Resources. 2015. Utah Predator Control Program Summary 2014- 2015. 6p

Utah Governor's Council on Balanced Resources. 2013. State of Utah Outdoor Recreation Vision, January, 60p. http://www.utah.gov/governor/docs/OutdoorRecreationVision.pdf

Utah Governor's Office of Energy Development. 2014. Utah Energy Efficiency and Conservation Plan. 47p.

Utah Weed Advisory Council and Utah Weed Control Association. 2004. Utah Strategic

Plan for Managing Noxious and Invasive Weeds. February 34 p.

Utah Wildlife Action Plan Joint Team. 2015. Utah Wildlife Action Plan: A plan for managing native wildlife species and their habitats to help prevent listing under the Endangered Species Act. Publication number 15--14. Utah Division of Wildlife Resources, Salt Lake City, Utah, USA.

Wasatch-Cache National Forest. 2003. Revised Forest Plan for the Wasatch-Cache National Forest, February.

Wasatch-Cache National Forest. 2006. Wasatch-Cache National Forest Noxious Weed Treatment Program. Final Environmental Impact Statement.

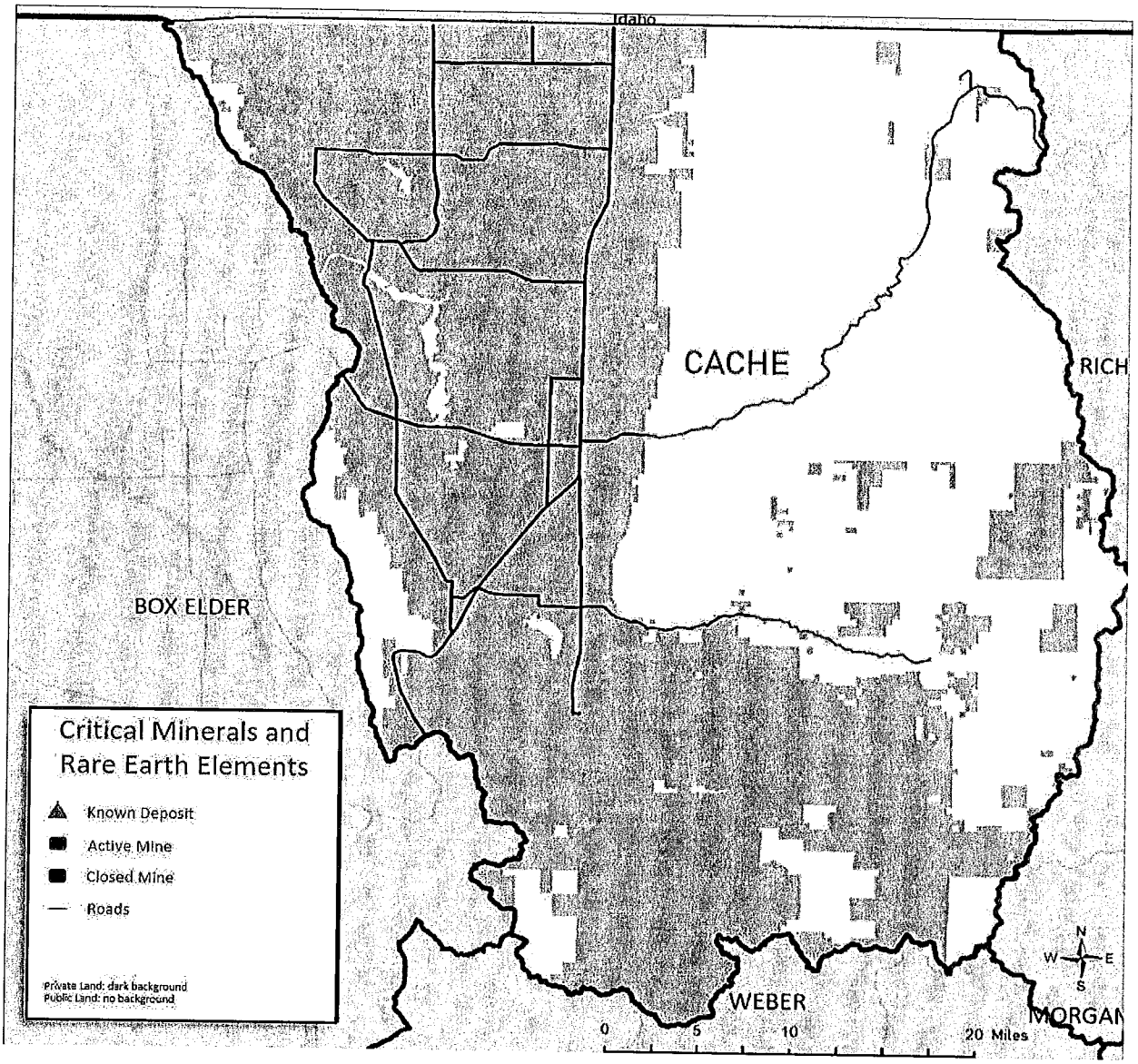
Wasatch-Cache National Forest. 2008. Wasatch-Cache National Forest Land and Resource Management Plan, Amendment Number 5, Wild and Scenic River Suitability.

31. CRITICAL MINERALS AND RARE EARTH ELEMENTS

In 2022, the US Geological Survey (USGS) updated the Critical Minerals List, which designates certain non-fuel minerals as critical to national security, the economy, renewable energy development, and infrastructure. Utah produces the following six critical minerals: beryllium, lithium, magnesium metal, palladium, platinum, and tellurium. Platinum, palladium, and tellurium are produced as secondary products at the Bingham Canyon Mine, which is owned by the Rio Tinto Group, located in Salt Lake County. Magnesium and lithium are produced as primary and secondary products, respectively, from evaporation ponds owned by US Magnesium located in Tooele County. Beryllium is produced as a primary product of operations at the Spor Mountain Mine, which is owned by Materion Natural Resources in Juab County. This beryllium is further refined in Millard County.

Related Resources:

- Mineral Resources
- Mining



Note: There are no locations marked on the map because there are no current known locations for critical mineral deposits or extraction operations.

31.1 Management Setting

31.1.1 Context

Currently, there are no known deposits of critical minerals in Cache County[1]. As a result of this, there are no mines extracting critical minerals in Cache County.

31.1.2 Findings

Economically viable mineral resources in Cache County are limited to salable minerals including stone, sand, gravel, and other aggregate. Because there are no known critical mineral deposits in Cache County, there are no applications for or existing leases related to the extraction of critical minerals.

31.1.3 Legal Context

Broader Context

In 2017, US President Donald Trump issued Executive Order 13817[2], which highlighted the importance of critical minerals to national defense, the economy, and industry and called for (1) a national strategy to promote the development of domestic sources, (2) assess vulnerabilities in the supply chain, and (3) promote research and development. In 2020, Executive Order 13953[3] was issued by President Trump declaring the reliance for critical minerals on foreign adversaries, specifically China, a national emergency. The executive order mandated strategies and policy directives intended to increase domestic production of critical minerals. In 2021, President Joe Biden issued Executive Order 14017[4] that, particularly for the US Department of Energy and US Department of Defense, emphasized the need to assess supply-chain vulnerabilities, strengthen domestic supply, and increase procurement through friendly nations. Together, these executive orders aimed to create a comprehensive understanding and response to the critical mineral and rare-earth element situation in the United States.

Applicable Laws

Federal and state laws regulating development, extraction, and reclamation of mineral resources are presented in Section 17, Mining, and Section 6, Energy Resources. Furthermore, Section 12, Land Use, provides procedural information for land use planning and methods to establish goals and objectives for mineral resources on public lands.

31.2 Desired Future State

In the event of discovery of critical mineral deposits on public lands within Cache County, cooperation with all relevant agencies on land use decisions will be sought. The protection of the health, safety, and wellbeing of both residents and the environment will remain the priority.

31.3 Management Objectives and Associated Policies and Guidelines

31.3.1 Management Objective

Facilitate effective coordination and collaboration between land managers, developers, the public, and Cache County regarding mineral resources developments.

Policies and Guidelines

a. Coordinate between stakeholders and actively participate during all stages of mineral resource development in Cache County.
b. Acknowledge and address the concerns of stakeholders prior to making or implementing decisions regarding mineral resources development in Cache County.

c. Support public engagement, through stakeholder meetings or public comment periods, so that the opinions of the public are considered during the development of mineral resources in Cache County.

31.3.2 Management Objective

Protect the health, safety, and wellbeing of residents of Cache County, which may be negatively affected by environmental impacts arising from the extraction of critical minerals.

Policies and Guidelines

a. Monitor mineral resource projects within Cache County to minimize or mitigate environmental hazards, such as threats to air and water quality.
b. Ensure that mineral resource development in Cache County has minimal impact on the daily activities (e.g., travel, access to property, access to recreation, etc.) of residents and visitors.

31.3.3 Management Objective

Encourage protection of the environmental quality of Cache County through mitigation of potential adverse effects that might arise from the extraction of critical minerals.

Policies and Guidelines

a. Encourage the protection of the quality of Cache County's natural waterways and aquifers from potential negative impacts as a result of mineral resource development.
b. Encourage the protection of Cache County's wildlife, with an emphasis on endangered or and threatened species, through the preservation of sensitive habitat, wildlife corridors, and prevention of habitat degradation during mineral resource development.
c. Encourage compliance with Cache County Code 17.18 - Sensitive Areas, as amended, in the course of mineral resource development in Cache County.
d. Limit physical environmental degradation, such as pollution, soil erosion, and deforestation during mineral resource development in Cache County.

31.4 References

[1] United States Geological Survey. 2011, 2019. Mineral Resource Data System (MRDS). https://mrdata.usgs.gov/mrds/

[2] Federal Register. 2017. Executive Order 13817, A Federal Strategy To Ensure Secure and Reliable Supplies of Critical Minerals. https://www.federalregister.gov/documents/2017/12/26/2017-27899/a-federal-strategy-to-ensure-secure-and-reliable-supplies-of-critical-minerals

[3] Federal Register. 2020. Executive Order 13953, Addressing the Threat to the Domestic Supply Chain From Reliance on Critical Minerals From Foreign Adversaries and Supporting the Domestic Mining and Processing Industries.

https://www.federalregister.gov/documents/2020/10/05/2020-22064/addressing-the-threat-to-the-domestic-supply-chain-from-reliance-on-critical-minerals-from-foreign

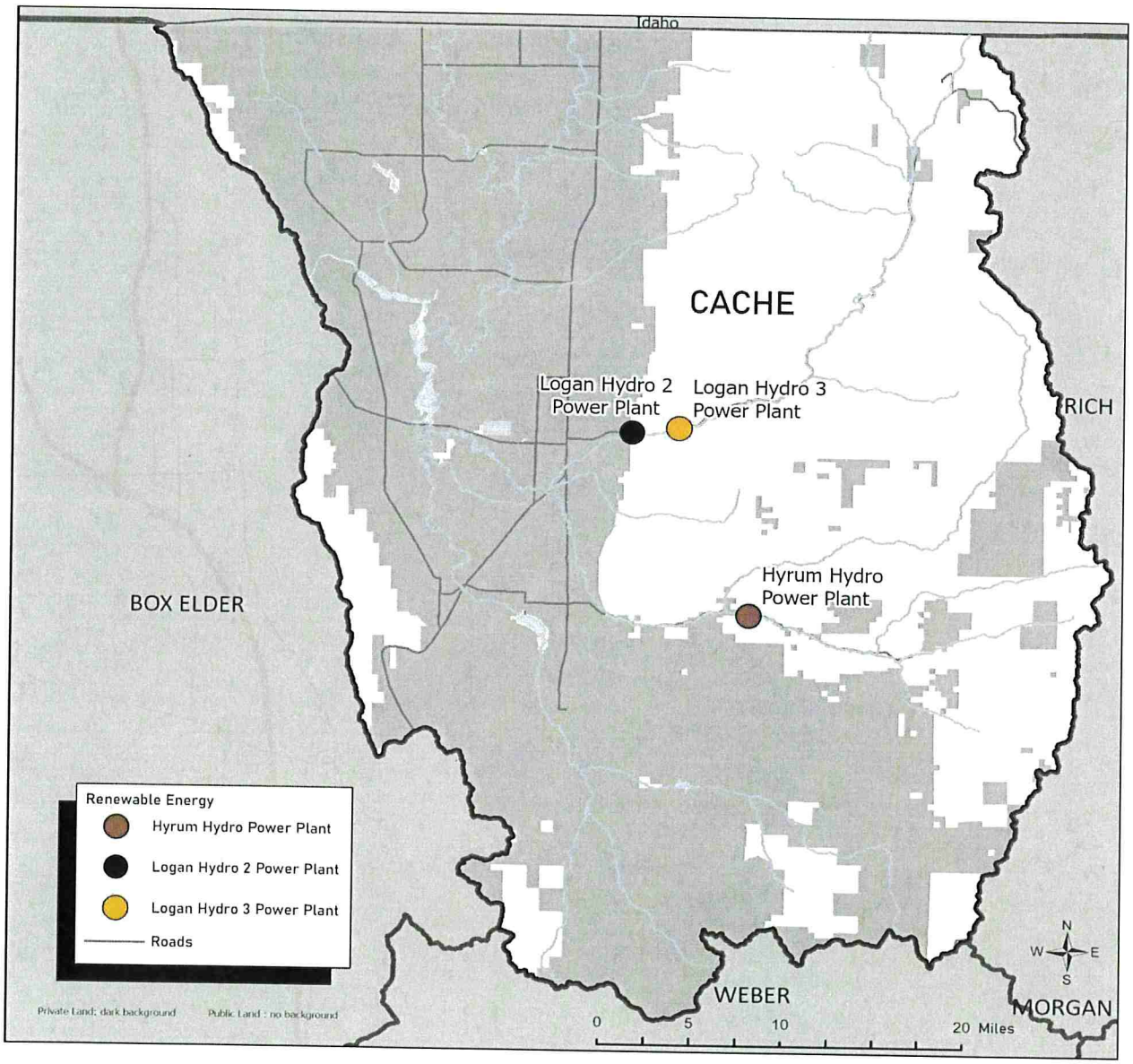
[4] The White House. 2021. Executive Order 14017, Executive Order on America's Supply Chains. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/

32. RENEWABLE ENERGY

Renewable energy is generated from sources that are sustainable, naturally replenished on a short timescale, and does not utilize finite resources (e.g., fossil fuels). Examples of renewable energy sources include geothermal, solar, wind, and hydropower. Having recently come to the forefront of energy production, renewable energy serves as an alternative to traditional energy sources (e.g., coal) because it causes less environmental damage and allows for a greater degree of energy independence.

Related Resources:

- Energy Resources
- Economic Considerations
- Air



32.1 Management Setting

32.1.1 Context

In 2022, 16 percent of Utah's total electricity was generated from renewable sources[1]. Around 72 percent of renewable energy produced in Utah was derived from solar energy, the majority of which was produced by large-scale power plants (i.e., those able to generate 1 megawatt [MW] or more). The remaining 28 percent of Utah's renewable energy was produced by other sources—11 percent from wind, 9 percent from hydropower, 7 percent from geothermal, and 1 percent from biogas. The areas where renewable energy was produced were the Wasatch Front, central Utah, and southern Utah.

32.1.2 Findings

Hydroelectric power is the only source of renewable energy produced by large-scale facilities on public lands within Cache County. This hydroelectric power is generated by the three following dams: Hydro II, Hydro III, and Hyrum P-946. These are colloquially known as Second Dam, Third Dam, and Hyrum City Dam, respectively. Hydro II and Hydro III are located on the Logan River in Logan Canyon. Hyrum P-946 is located on the Blacksmith Fork River in Blacksmith Fork Canyon. All three dams are located on US Forest Service property.

Expansion for renewable energy on public lands in Cache County is limited because there are currently no identified zones that are optimal for solar and wind energy. However, a study published by the Utah Department of Natural Resources found that Cache County contains low to moderate geothermal zones[2], some of which are located on public lands. Additionally, because multiple rivers are located on public lands, there is potential for expansions of hydroelectric power. Therefore, although the likely potential is limited to just geothermal and hydroelectric, there is potential for expansion of renewable energy projects on public lands within Cache County.

32.1.3 Legal Context

Broader Context

Utah State Code 79-6-301[3] was published and took effect on May 3, 2023, and outlines the State of Utah's energy policy. Goals relevant to renewable energy include the promotion of renewable energy development, expansion of infrastructure, and energy independence both within the state and as a nation. Section (1)(b)(ii) focuses on the promotion of renewable energy development and states, "Utah shall promote … the development of renewable energy resources, including geothermal, solar, wind, biomass, biofuel, and hydroelectric". Section (1)(b)(v) focuses on the expansion of energy-related infrastructure and states, "Utah shall promote … infrastructure to facilitate energy development, diversified modes of transportation, greater access to domestic and international markets for Utah's resources, and advanced transmission systems". Sections (1)(f) and (1)(g) focus on the promotion of energy conservation and energy independence and state, respectively, "Utah shall pursue energy conservation, energy efficiency, and environmental quality" and "Utah shall promote the development of a secure supply chain from resource extraction to energy production and consumption".

Applicable Laws

Federal and state laws regulating the development of renewable energy are presented in Section 6, Energy Resources.

32.2 Desired Future State

Cache County supports exploration and study of the potential expansion of renewable energy projects on its public lands.

32.3 Management Objectives and Associated Policies and Guidelines

32.3.1 Management Objective

Explore and expand avenues for implementing renewable energy projects on public lands within Cache County.

Policies and Guidelines

a. Seek opportunities for the development of renewable energy resources in Cache County, such as wind, solar, geothermal, and hydroelectric, expansion.
b. Utilize the 2009 Utah Renewable Energy Zones Taskforce Report as well as emerging information to make decisions related to renewable energy development in Cache County.

32.3.2 Management Objective

Coordinate and collaborate between land managers, developers, the public, and Cache County with regard to new renewable energy developments or expansion of existing resources.

Policies and Guidelines

a. Coordinate between relevant parties and actively participate during all stages of renewable energy development within Cache County.
b. Address concerns of stakeholders prior to making or implementing decisions regarding renewable energy within Cache County.
c. Engage the public through stakeholder meetings or public-comment periods so that the opinions of the public are considered during the process of developing or expanding renewable energy within Cache County.

32.3.3 Management Objective

Protect the health, safety, and wellbeing of the residents of Cache County, which may be negatively affected by the implementation of renewable energy projects.

Policies and Guidelines

a. Monitor any projects within Cache County to mitigate any environmental hazards, such as air and

water pollution.

b. Ensure that any development that occurs has minimal impact on the daily activities (e.g., travel, access to property, access to recreation, etc.) of residents and visitors.

32.3.4 Management Objective

Encourage protection of the environmental quality of Cache County through mitigation of potential adverse effects that might arise from the implementation of renewable energy projects.

Policies and Guidelines

a. Encourage the protection of Cache County's natural waterways and aquifers from potential negative impacts as a result of renewable energy development.
b. Encourage the protection of Cache County's wildlife with an emphasis on endangered and threatened species, through the preservation of sensitive habitat, wildlife corridors, and prevention of habitat degradation during renewable energy development.
c. Encourage compliance with Cache County Code 17.18 - Sensitive Areas, as amended, in the course of renewable energy development in Cache County.
d. Limit physical environmental degradation, such as pollution, soil erosion, and deforestation during renewable energy development in Cache County.

32.3.5 Management Objective

Encourage the protection of the existing state of visually appealing scenes and views on public lands in Cache County.

Policies and Guidelines

a. Encourage land use goals, decisions, and renewable energy developments to consider the impacts of development on Cache County's visual resources and the overall experience the public has on public lands.
b. Encourage preservation and maintenance of significant vistas and landscapes that have special visual and aesthetic qualities.
c. Preserve the visual character of areas that may be negatively affected by renewable energy development in Cache County.

32.4 References

[1] United States Energy Information Administration. 2023. Utah, State Profile and Energy Estimates, Profile Analysis. https://www.eia.gov/state/analysis.php?sid=UT#:~:text=In%202022%2C%20about%2016%25%20of,came%20from%20renewable%20energy%20sources

[2] Utah Geological Survey. 2020. Utah's Energy Landscape, 5th Edition. https://energy.utah.gov/wp-content/uploads/Utahs-Energy-Landscape-5th-Edition.pdf

[3] Utah State Legislature. 2023. Utah code, Title 79, Chapter 6, Part 3, Section 301. https://le.utah.gov/xcode/Title79/Chapter6/79-6-S301.html

33. PIPELINES & INFRASTRUCTURE

For the purposes of this planning document, pipelines and infrastructure are defined as the primary physical structures and facilities used to transport and store raw materials, energy, water, utilities, products, and people within and across Utah. This chapter will focus on pipelines, electrical transmission, telecommunications, vehicle and rail transportation, and other types of major infrastructure.

Related Resources:

- Ditches and Canals
- Energy Resources
- Land Use

33.1 Management Setting

33.1.1 Context

Pipelines and infrastructure encompass a variety of resource types, the most common of which are listed and explained below.

Electrical Transmission: High-voltage electricity is conveyed from generation sources to load-center substations where it's transformed into lower-voltage electricity for distribution to end users.

Natural Gas Pipelines: Raw natural gas is moved from production areas to processing facilities and distributed to end users.

Oil Pipelines: Crude oil is extracted from the earth and transported through networks of pipes and pump stations to processing facilities and then distributed to consumers.

Hydrogen Pipelines: Manufactured products are transported through networks of pipes and pump stations from production areas to consumers.

Water Pipelines: Substantial infrastructure projects are used to transport large quantities of water over long distances through varying terrain and elevations from reservoirs and rivers to major population centers and agricultural users.

Telecommunications: Electronic information is transmitted and distributed to connect consumers to the Internet through infrastructure like broadband, typically transmitted through fiber-optic cable, which allows high-speed access to large quantities of digital information by consumers and businesses.

Transportation Infrastructure: A network of major roads, highways, railroads, and other infrastructure used to transport goods and services within and across Utah.

Other Infrastructure: Other infrastructure systems in place include mechanical wastewater treatment

facilities, sewage-processing systems, and stormwater systems.

33.1.2 Findings

The following tables and maps show a comprehensive assessment of the various utilities and infrastructure present within Cache County. A wide range of infrastructure types are represented, including municipal, electrical, energy, telecommunications, and transportation. Existing infrastructure and proposed projects are included; proposed projects are distinctly labeled. Both public and private lands are included in this assessment.

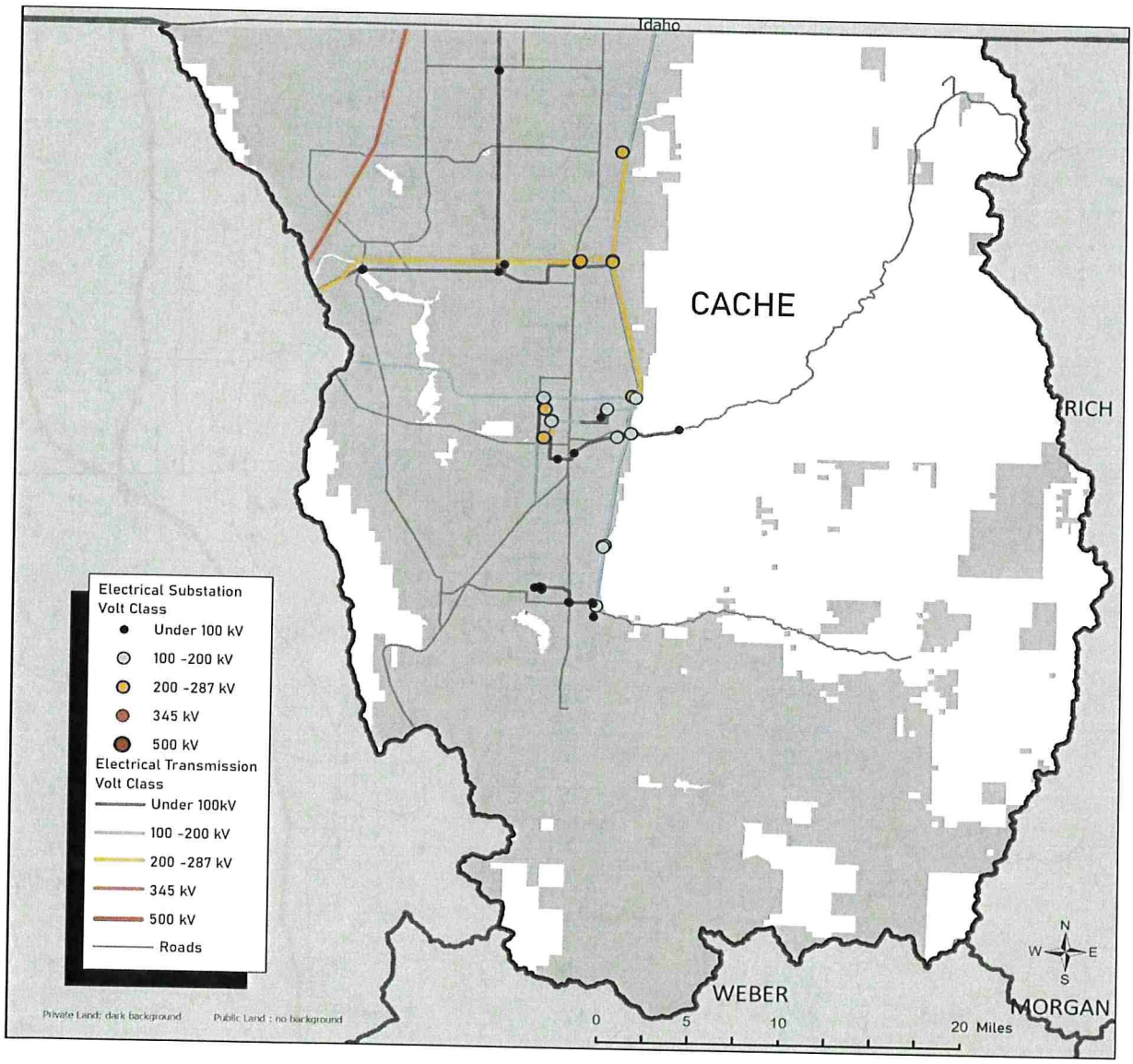


Table 33.1 Existing electrical transmission line by type and voltage class

Alternating Current (AC) Transmission Lines		Substations
Kilovolt Category	**Miles**	**Total (Count)**
Under 100	61.4	21
100-161	51.7	11
230	63.0	12
345	11.2	0
500	0	0
Unknown	0	1
Total	187.3	45

Source: Homeland Infrastructure Foundation-Level Data, Electric Power Transmission Lines & Electrical Substations (HIFLD, 2021)

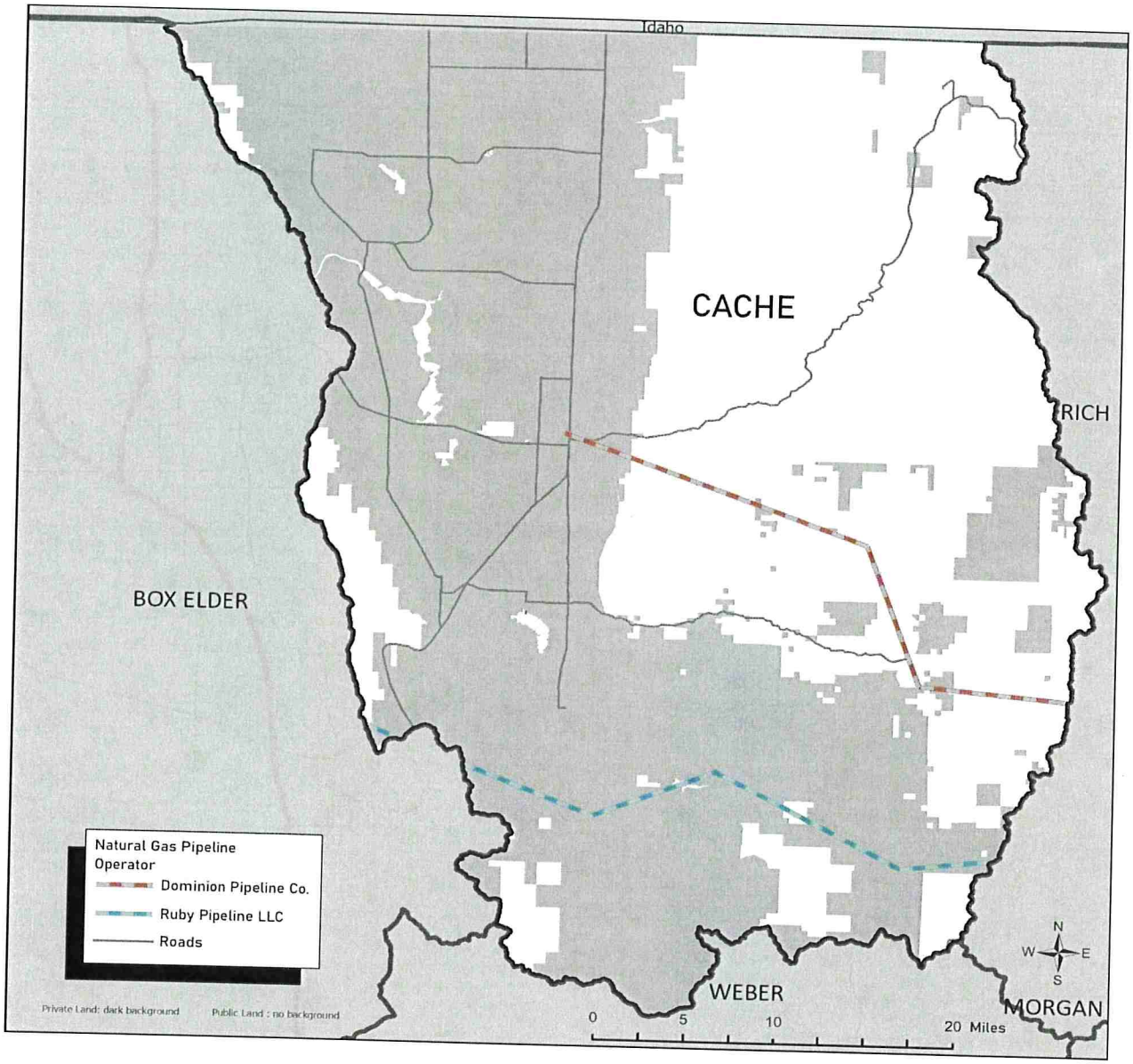


Table 33.2 Existing natural gas pipeline length by operator

Natural Gas Pipeline Length	
Operator	**Total (miles)**
Questar Pipeline Co.	26.3
Ruby Pipeline LLC	25.8
Total	52.1

Source: U.S. Energy Information Administration, U.S. Natural Gas Interstate and Intrastate Pipelines (EIA, 2020a)

Table 33.3 Existing oil pipeline by product type and operator

Oil Pipeline			
Type	**Operator**	**Pipeline**	**Total (miles)**
None in Cache County	-	-	0.0
Total			0.0

Source: U.S. Energy Information Administration, U.S. Crude Oil Pipelines, HGL Pipelines, and Petroleum Pipelines (EIA, 2020b)

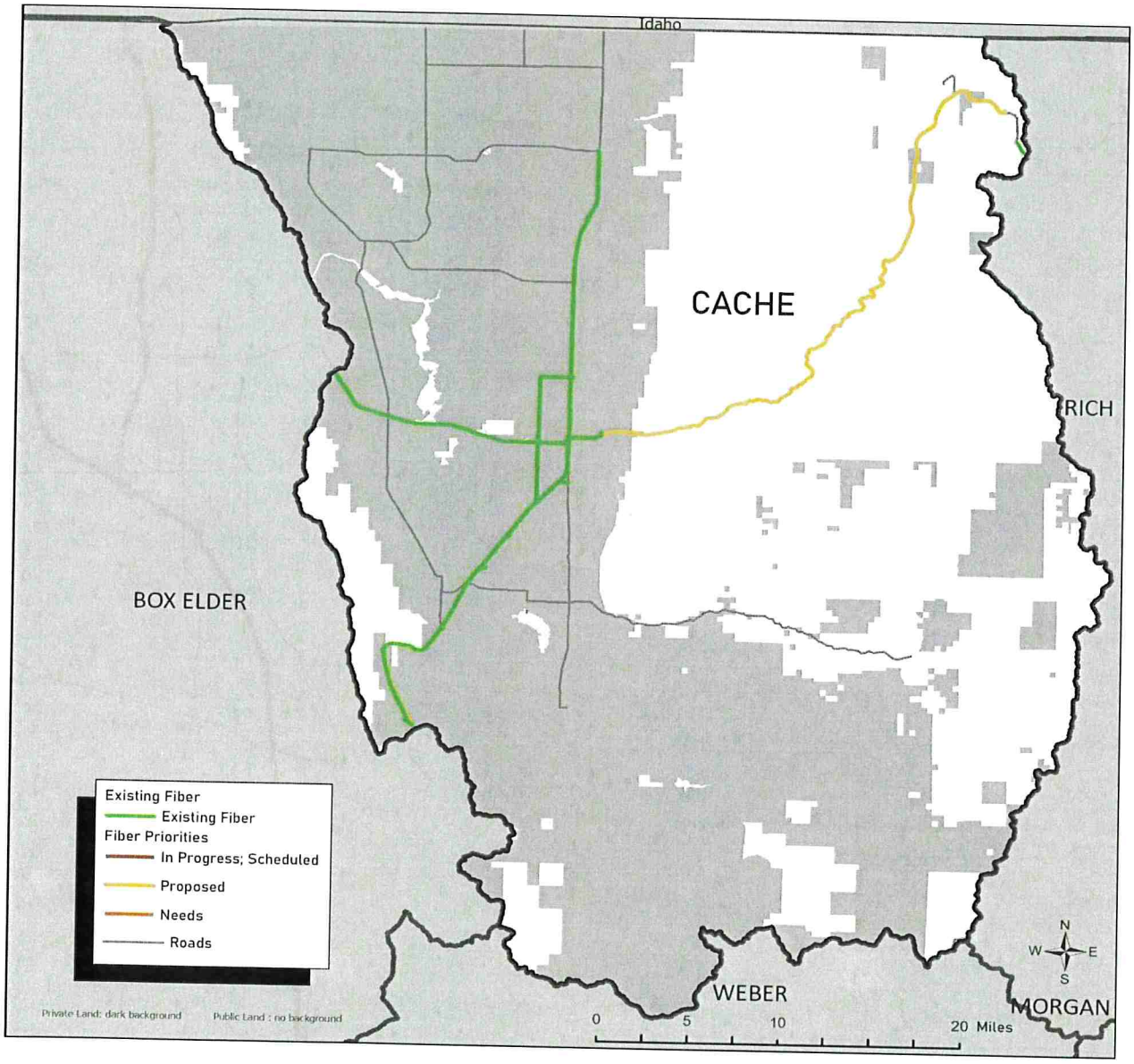


Table 33.4 Status of fiber optic cables in Cache County

Existing and Proposed Fiber Optic Cable Length		
Status	**Title**	**Total (miles)**
Existing	Multiple	98.6
Proposed	Logan Main Street; 1400 N to 2500 N	1.4
Proposed	Sardine Canyon	6.9
Proposed	Logan Canyon	29.0
Total		135.9

Source: Utah Department of Transportation fiber program features services (UDOT 2021a, 2021b)

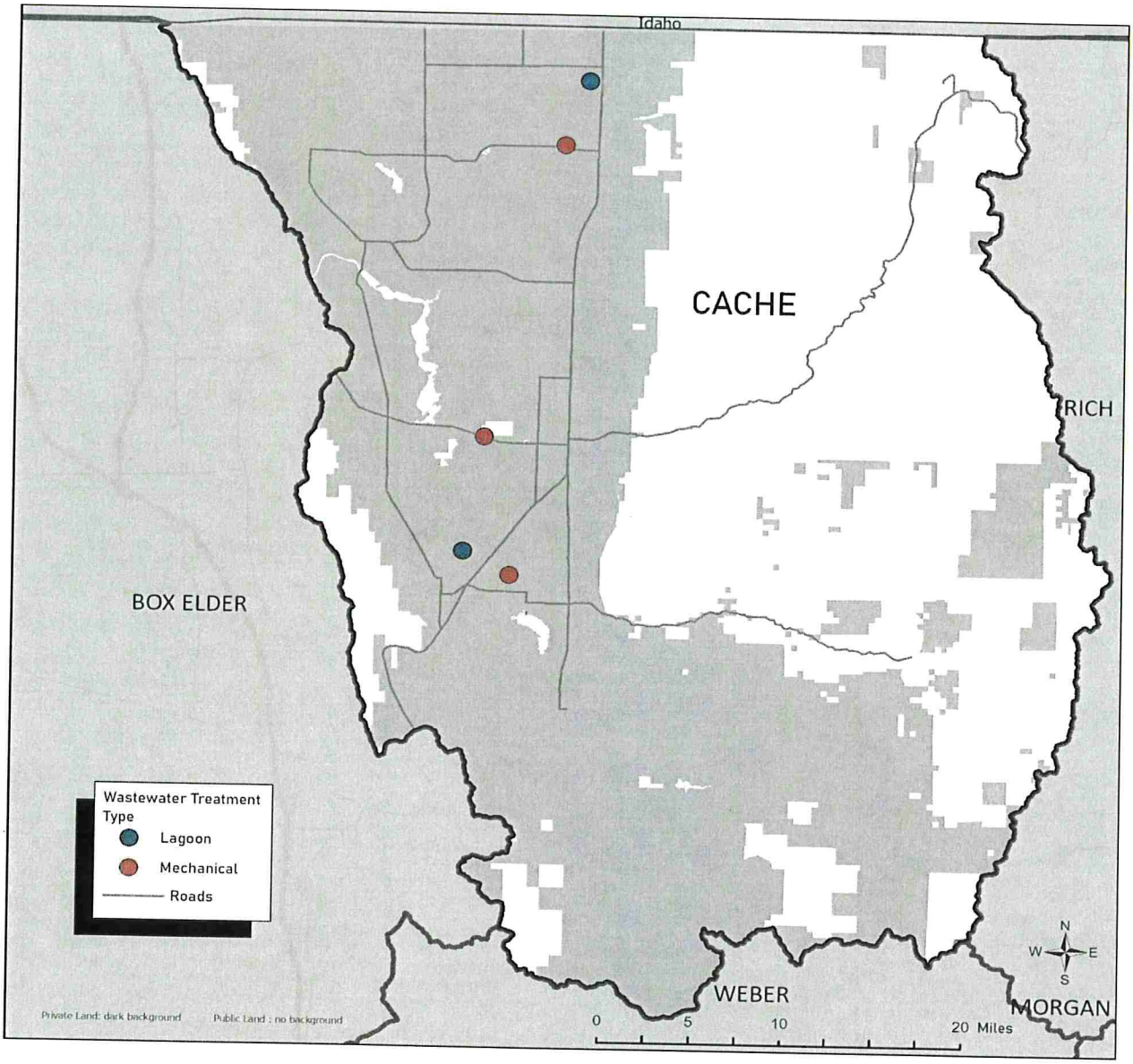


Table 33.5 Active and municipal sewer wastewater treatment facilities

Facility Name	NPDES Permit	Type	Discharge Location
City of Richmond	UT0020907	Lagoon	Ditch to Cub River
Hyrum City	UT0023205	Mechanical	Ditch to Spring Creek
Lewiston City	UT0020214	Lagoon	Cub River
Logan City Corp.	UT0021920	Mechanical	Irrigation ditch to Cutler Res.
Wellsville City Corp.	UT0020371	Lagoon	Little Bear River

Source: Utah Department of Environmental Quality, Division of Water Quality, UPDES Dischargers, public-owned wastewater

treatment facility discharge (DWQ, 2021)

Table 33.6 Existing and planned roadways by functional class

Functional Class	Existing Total (Miles)	Planned Total (Miles)
Interstate	0	0
Other Freeway and Expressway	0	0
Other Principle Arterials & Minor Arterial	133.2	0
Major Collector & Minor Collector	245.0	1.4
Local (UDOT only)	50.6	0
Total	428.8	1.4

Source: Utah Department of Transportation, roadway functional class (2022)

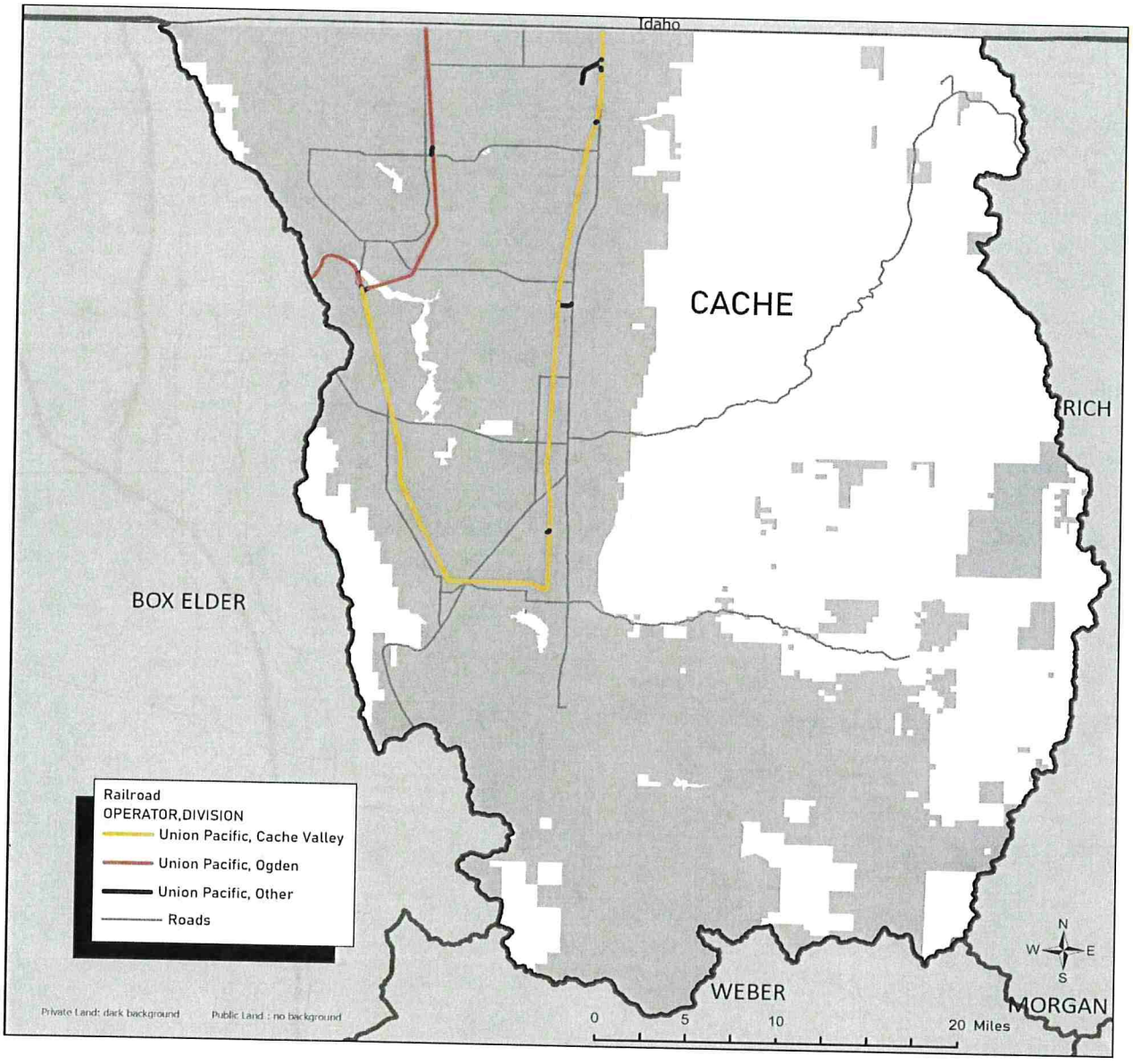


Table 33.7 Existing railroad track length by operator and division

Operator	Division	Passengers (Y/N)	Total (Miles)
Union Pacific	Cache Valley	N	45.0
Union Pacific	Ogden	N	20.9
Union Pacific	Other	N	4.5
Total			70.4

Source: Utah Geospatial Resource Center data portal, railroads (UGIC, 2017)

33.1.3 Legal Context

Electrical Transmission: The Federal Powers Act 1921, as amended, provides for federal oversight of the bulk of electrical transmission system by the Federal Energy Regulatory Commission (FERC). The Energy Policy Act of 2005 (among other items) enables FERC to facilitate transmission planning to meet the needs of utilities serving retail customers. In 1996, FERC issued Order No. 888, which opened all interstate transmission lines to use by any power generator to transmit power across the bulk transmission grid, provided the power generator pays tariffs to the transmission line utility owners. This is known as the Open Access Transmission Tariff (OATT). The FERC's Order No. 889 sets standards of conduct for power generators utilizing OATT transmissions.

Natural Gas/Oil/Hydrogen Pipelines: The Pipeline and Hazardous Materials Safety Administration (PHMSA), operating under the Pipeline Safety Act, regulates the siting, design, construction, and operation of pipelines. The Federal Energy Regulatory Commission (FERC), operating under the National Environmental Protection Act, ensures that environmental standards are met. The United States Department of Transportation (DOT), through PHMSA, regulates hydrogen pipelines via 49 CFR §192. Additionally, the State of Utah authorizes counties to enact any ordinances or supplemental legislation, necessary to carry out their duties, so long as they do not conflict with state or federal law.

Water Pipelines: All water use within the State of Utah is governed by Utah Code, Title 73. Refer to Chapter 25, Water Rights, for more information.

Telecommunications: The coordination of highway and broadband information, including the collection and maintenance of broadband data from providers and private or public entities, is regulated by Utah Code § 63N-3-501 (2020). Telecommunication installation, including utility access to the US interstate highway system including rights-of-way, is regulated by Utah Code §72-7-108 (2018) and Utah Administrative Rule § 907-64. Any conflicts that result from placement or the relocation of utility facilities with the construction of highways, which applies to any and every facility not owned by the State of Utah, falls under the Utility Accommodation Rule (Utah Administrative Rule §930-7).

Transportation Infrastructure: The Utah Department of Transportation (UDOT) was established with the authority and responsibility for planning, research, design, construction, maintenance, security, and safety of state transportation systems (Utah Code §72). This includes the preparation and adoption of standard plans and specifications for the construction and maintenance of state highways.

Other Infrastructure: The Federal Water Pollution Control Act of 1972, commonly referred to as the Clean Water Act 40 CFR § 1, Subchapters D, N, and O (Parts 100-140, 401-471, and 501-503), gives the United States Environmental Protection Agency (EPA) the federal authority to set standards for allowable pollutants for point and nonpoint source discharge into waterways. The Utah Water Quality Act as amended establishes a framework for State oversight of water quality.[1]

33.2 Desired Future State

The development of pipelines and infrastructure is essential in providing services and utilities for current and future residents of Cache County. However, it is important to ensure that this development occurs in a way that does not impact the health and safety of residents, the environment, or the visual quality of agricultural and natural areas of Cache County.

33.3 Management Objectives and Associated Policies and Guidelines

33.3.1 Management Objective

Facilitate effective coordination and collaboration between land managers, developers, the public, and Cache County on any infrastructure project proposals.

Policies and Guidelines

a. Coordinate between stakeholders and actively participate during all stages of infrastructure development in Cache County.
b. Acknowledge and address the concerns of stakeholders prior to making or implementing decisions regarding infrastructure development in Cache County.
c. Support public engagement, through stakeholder meetings or public comment periods, so that the opinions of the public are considered during the development of infrastructure in Cache County.

33.3.2 Management Objective

Encourage compliance with Cache County Code 17.19 - Public Infrastructure (PI) Overlay Zone, as amended.

Policies and Guidelines

a. Review all applications and infrastructure development decisions to determine if Cache County Code 17.19 - Public Infrastructure (PI) Overlay Zone, as amended, is relevant.
b. Once an infrastructure development project has been approved and completed, encourage compliance to all conditions and stipulations set forth by Cache County Code.

33.3.3 Management Objective

Encourage the protection of the existing state of visually appealing scenes and views on public lands in Cache County.

Policies and Guidelines

a. Encourage land use goals, decisions, and transportation and utility solutions to consider the impacts of development on Cache County's visual resources and the overall experience the public has on public lands.
b. Encourage preservation and maintenance of significant vistas and landscapes that have special

visual and aesthetic qualities.

c. Preserve the visual character of areas that may be negatively affected by infrastructure development in Cache County.

33.3.4 Management Objective

Protect the health, safety, and wellbeing of the residents of Cache County, which may be negatively affected by the implementation of infrastructure projects.

Policies and Guidelines

a. Monitor any projects within Cache County to minimize or mitigate environmental hazards, such as threats to air and water quality.
b. Ensure that any infrastructure development in Cache County has minimal impact on the daily activities (e.g., travel, access to property, access to recreation, etc.) of residents and visitors.

33.3.5 Management Objective

Encourage protection of the environmental quality of Cache County through mitigation of potential adverse effects that might arise from the implementation of transmission infrastructure projects.

Policies and Guidelines

a. Encourage the protection of Cache County's natural waterways and aquifers from potential negative impacts as a result of infrastructure development.
b. Encourage the protection of Cache County's wildlife, with an emphasis on endangered and threatened species, through the preservation of sensitive habitat, wildlife corridors, and prevention of habitat degradation during infrastructure development.
c. Encourage compliance with Cache County Code 17.18 - Sensitive Areas, as amended, in the course of infrastructure development in Cache County.
d. Limit physical environmental degradation, such as pollution, soil erosion, and deforestation, during infrastructure development in Cache County.

33.3.6 Management Objective

Explore options to increase recreational access and maintain existing road access.

Policies and Guidelines

a. Refer to the goals and guidelines established by the Cache County Trails Master Plan.
b. Encourage collaboration between relevant parties to explore trail creation opportunities, including potential expansion of a countywide trails system.
c. Explore opportunities to enhance connectivity between existing and planned trails as part of a new infrastructure development in Cache County.
d. Maintain existing public and private road access to public lands and private properties.

33.4 References

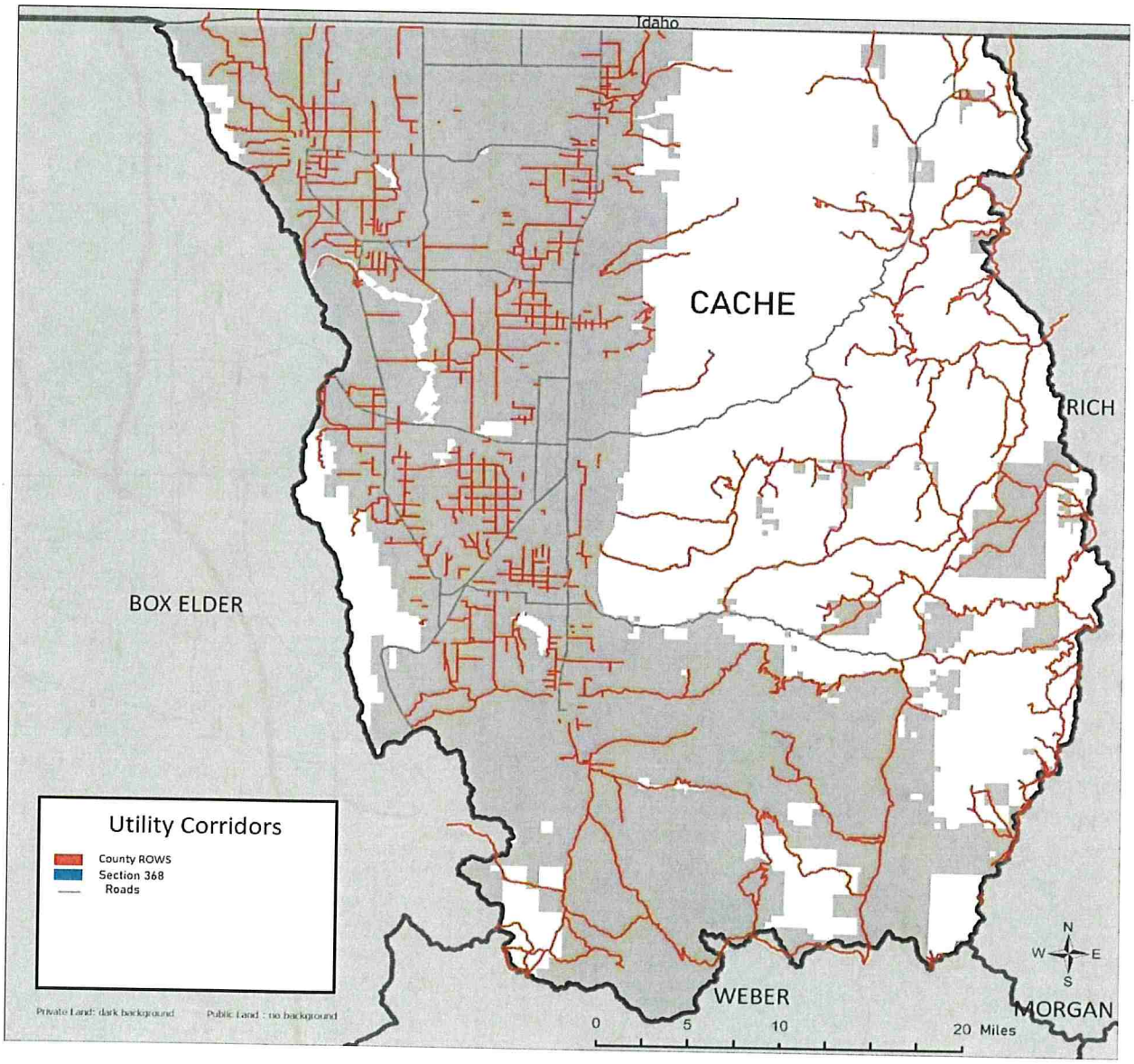
[1] Salt Lake County. 2023. County Resource Management Plan, Draft.

34. UTILITY CORRIDORS

Utility corridors, mainly contained in rights-of-way or easements, are dedicated tracts of land that are critical for the transportation of raw materials, processed materials, and energy. Examples of common infrastructure uses for utility corridors include electrical transmission lines, pipelines, and telecommunications lines. Aside from the utility infrastructure itself—which can be placed above or below ground on private, state, or federal lands—additional space is typically granted to allow for ease of access and maintenance. As a result of these conditions and potential clustering of utilities, the width of a utility corridor can range from 20 feet to 1 mile wide.

Related Resources:

- Infrastructure and Pipelines
- Energy Resources



34.1 Management Setting

34.1.1 Context

There are currently no Section 368 Energy Corridors on public lands in Cache County.

34.1.2 Findings

There are no Section 368 Energy Corridors in the County[1].

Table 34.1 Section 368 energy corridor length by designated use and concern

Name	Designated Use	Corridor of Concern	Total (Miles)
None in Cache County	-	-	0.0
Total			0.0

Source: U.S. Department of the Interior, Bureau of Land Management, West-Wide Energy Corridor Information Center (BLM, 2009)

34.1.3 Legal Context

The primary federal law, relevant to Cache County, regulating utility corridor placement on Forest Service land is the National Forest Management Act of 1976 (NFMA), which requires federal agencies to complete resource management plans that list and describe future goals and objectives for managing lands within their jurisdictions. These documents include any proposed locations for utility corridors.

Federal agency decisions regarding utility corridors must comply with the National Environmental Policy Act of 1969 (NEPA), which stipulates that all projects with the potential to impact the environment must be evaluated via an environmental assessment, environmental impact statement, and other documentation. Regulatory laws that require avoidance, minimization, and possible mitigation include but are not limited to the following:

- Antiquities Protection Act of 1993, which protects significant cultural resources, historic properties, and paleontological resources from negative impacts.
- Clean Water Act of 1972, which, among other requirements, regulates the discharge of pollutants and fill material into certain jurisdictional waters (also known as "waters of the United States").
- Endangered Species Act, which is administered by the US Fish and Wildlife Service (USFWS), regulates potential project impacts to threatened and endangered species.
- Section 368 of the Energy Policy Act of 2005, which directs federal agencies to designate energy corridors on federal lands in the western United States. This set of regulations was enacted with the goal to "improve reliability, relieve congestion, and enhance the capability of the national grid to deliver electricity".

34.2 Desired Future State

Minimize the impacts of new utility corridors across public lands on the health and safety of residents and the environment while promoting access to recreational areas to realize potential direct benefits to the residents and visitors of Cache County.

34.3 Management Objectives and Associated Policies and Guidelines

34.3.1 Management Objective

Review the potential establishment of utility corridors to encourage service to the residents of Cache County.

Policies and Guidelines

a. Enter benefit-sharing agreements with neighboring counties or jurisdictions so that benefits stemming from utility corridor development are fairly distributed to Cache County residents and stakeholders.
b. Regularly review and update regional agreements and partnerships for Cache County's utility corridor interests and priorities to be adequately represented and protected.
c. Explore opportunities for expanded recreational access to public lands within Cache County, including trails, associated with potential future utility corridors.

34.3.2 Management Objective

Explore options to increase recreational access.

Policies and Guidelines

a. Encourage utility corridor development projects to comply with the goals and guidelines established by the Cache County Trails Master Plan.
b. Encourage collaboration between stakeholders to explore trail-creation opportunities, including potential expansion of a countywide trails system in Cache County.
c. Explore opportunities to enhance connectivity between existing and planned trails as part of new utility corridor development.

34.3.3 Management Objective

Facilitate effective coordination and collaboration between land managers, developers, the public, and Cache County when considering utility corridor developments.

Policies and Guidelines

a. Coordinate between stakeholders and actively participate in all stages of development.
b. Address the concerns of stakeholders prior to making or implementing decisions associated with utility corridor development in Cache County.
c. Support public engagement, through stakeholder meetings or public comment periods so that the opinions of the public are considered in the development process.

34.3.4 Management Objective

Protect the health, safety, and wellbeing of the residents of Cache County, which may be negatively affected by environmental impacts arising from the implementation of utility corridors.

Policies and Guidelines

a. Ensure utility corridor projects within Cache County to minimize or mitigate environmental hazards, such as threats to air and water quality.
b. Ensure that utility corridor development in Cache County has minimal impact on the daily activities (e.g., travel, access to property, access to recreation, etc.) of residents and visitors.

34.3.5 Management Objective

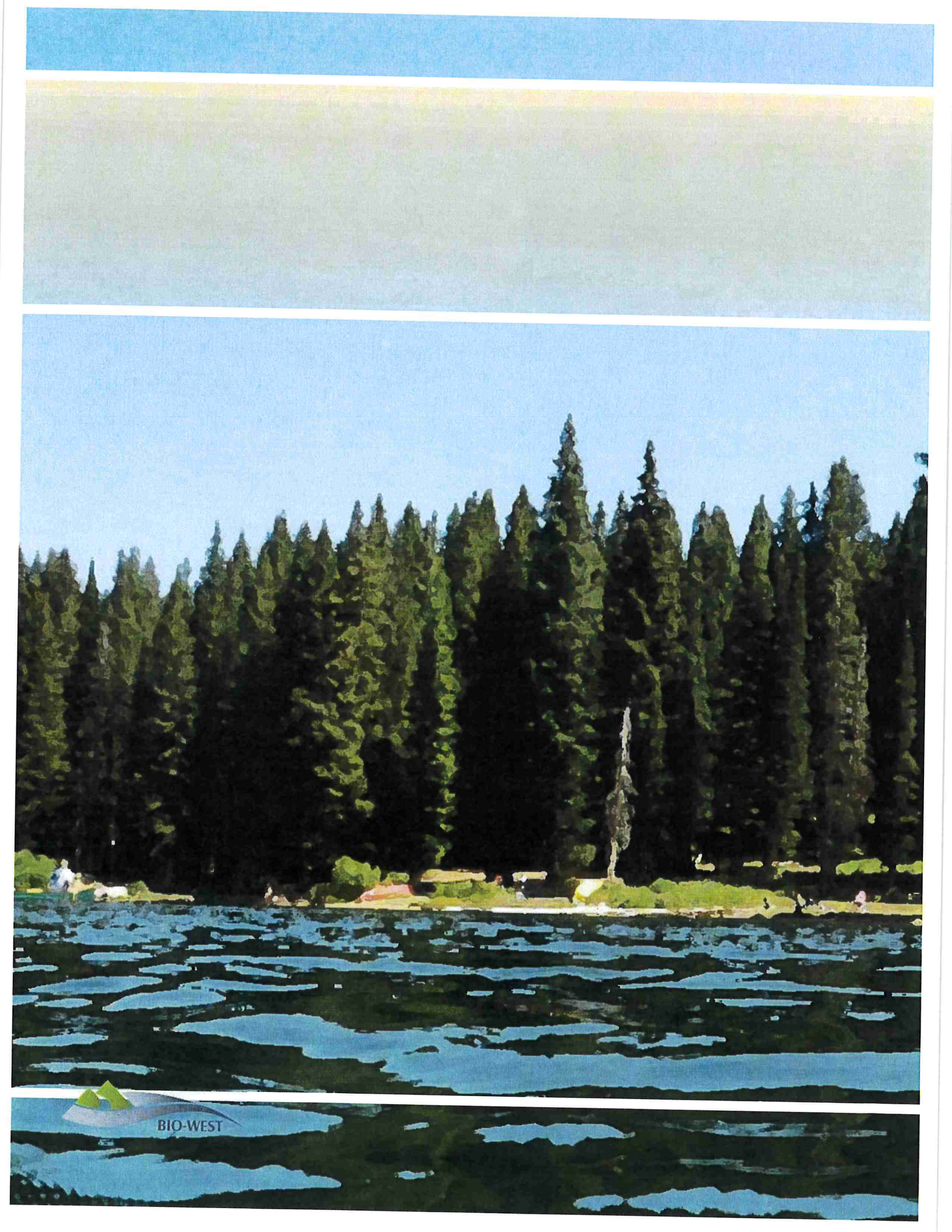
Encourage protection of the environmental quality of Cache County through mitigation of potential adverse effects that might arise from the establishment of utility corridors.

Policies and Guidelines

a. Encourage the protection of Cache County's natural waterways and aquifers from potential negative impacts as a result of utility corridor implementation.
b. Encourage the protection of Cache County's wildlife with an emphasis on endangered and threatened species, through the preservation of sensitive habitat, wildlife corridors, and prevention of habitat degradation during the establishment of utility corridors.
c. Encourage compliance with Cache County Code 17.18 - Sensitive Areas, as amended, in the course of utility corridor implementation in Cache County.
d. Limit physical environmental degradation, such as pollution, soil erosion, and deforestation during the implementation of utility corridors in Cache County.

34.4 References

[1] Energy Information Administration. 2023. Energy corridor Maps and Geospatial Data. https://corridoreis.anl.gov/maps/


BIO-WEST

Vendor Sign in Sheet

Cache Election Center

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Batch challenge count

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RESOLUTION NO. 2023-21
CACHE COUNTY, UTAH
SEASONAL ACCESS RESTRICTIONS FOR COUNTY ROADS

A RESOLUTION ESTABLISHING AND UPDATING
SEASONAL ACCESS RESTRICTIONS ON COUNTY ROADS

WHEREAS, Chapter 12.01, Public Roadways and Rights of Way, of the County Code authorizes the Cache County Council to place gates, locked gates, and seasonal restrictions on a Cache County road; and

WHEREAS, it is in the public interest to reduce damage to county roads during seasonal inclement weather, particularly during the fall, winter, and spring seasons; and

WHEREAS, in order to reduce vehicular hazards on county roads that are hazardous due to snow, ice, excessive precipitation, or similar conditions; and

WHEREAS, the Cache County Council has determined that it is both necessary and appropriate for the County to adopt standards for seasonal access on county roads.

NOW, THEREFORE, BE IT RESOLVED that the Cache County Council hereby adopts the following resolution:

> The Seasonal Access Restrictions on County Roads, attached as Exhibit A is hereby adopted, superseding all prior seasonal access resolutions.

APPROVED AND ADOPTED this 7th day of November, 2023.

	In Favor	Against	Abstained	Absent
Beus	X			
Erickson	X			
Goodlander	X			
Gunnell	X			
Hurd	X			
Tidwell	X			
Ward	X			
Total	7	Ø	Ø	Ø

CACHE COUNTY COUNCIL

David Erickson, Chair
Cache County Council

ATTEST:

David Benson
Cache County Clerk

Disclaimer: This is provided for informational purposes only. The formatting of this resolution may vary from the official hard copy. In the case of any discrepancy between this resolution and the official hard copy, the official hard copy will prevail.

EXHIBIT A

SEASONAL ACCESS RESTRICTIONS FOR COUNTY ROADS

Cache County Council has determined that it is both necessary and appropriate for the County to place seasonal restrictions and close some county roads to motorized vehicles. These closures are to protect public safety, reduce maintenance costs, maintain water quality, and prevent erosion during snowy and icy conditions late fall through spring.

The following County roads with be closed with locked gates. The dates show the earliest date a road will be open to motorized vehicles in the spring and date the road will close in the fall. The spring opening date may be extended based on road conditions and snow. See attached map for road locations.

Roads Scheduled to open April 15th and Close November 15.

3200 West (Old Canyon Road & 8500 South)

- This road provides access from Old Canyon road to Mount Pisgah Road. The gate closure will be at the north end at Old Canyon Road. No gate is required on the south end due to Mount Pisgah also being closed at the same time.

Birch Canyon Lower

- This road provides access up Birch Canyon. The gate closure will be at the bottom gate. Additional gates located up higher in the Canyon will also be closed by the Forest Service and Private Owners.

Gnehm Road (3400 North)

- This road is a gravel road that starts in North Logan at 1600 East and 3400 North and loops up near the base of the mountains and then turns into Hyde Park Canyon. The closure is a small portion of the road located in the middle of the loop. There is a gate located at both ends of the closure.

High Creek Canyon Road

- This road provides access up High Creek Canyon. The gate closure will be at the bottom of High Creek Canyon at approximately 12900 East where the gravel road begins. Additional gates located up higher in the Canyon will also be closed by the Forest Service.

Ivan's Hollow Road

- This road is a short section of gravel road located northeast of Richmond. The road will be gated at the bottom near High Creek Road and at the top near Upper High Creek Road.

Mount Pisgah Road

- This road runs from US 89/91 near Sardine Summit east to Paradise. The road will be gated from the east site at the intersection of 2400 West and the west side near US 89/91.

Short Divide Road

- This road runs from Clarkston to the Box Elder County line. This road is closed both in Cache County and Box Elder County. The gate closure in Cache County is located at approximately 9200 West and 9950 North at the Clarkston City Limits. The gate located in Box Elder County is closed by Box Elder County.

EXHIBIT A

SEASONAL ACCESS RESTRICTIONS FOR COUNTY ROADS

Smithfield Dry Canyon Road

- This road is used to access Smithfield Dry Canyon. The gate is located at the bottom of the Canyon near the Smithfield City limits where the gravel road begins.

South Canyon Road

- This road runs from Avon to the Weber County Line. The gate on the Cache County side is located approximately 2 miles south of Avon. This closure also affects other mountain roads such as Three Mile Canyon, Davenport Road, Flint Grove, and Blue Bell Mine. There is a gate located in Weber County that is closed by Weber County.

Maple Bench (2200 South)

- This is a gravel road that runs from intersection of 2200 south and 6400 west, and ends at the Maple Bench/Cold Water Trailhead. The road will be gated at the intersection of 2200 South and 6400 West.

East Canyon

- This road runs from the South Canyon Road to the east side of Porcupine Dam. The road will be gated at west end of Porcupine Dam and the closure extends to the east end of the dam where the Mineral Point/La Plata road begins.

Roads Scheduled to open June 1st and Close October 1.

Three Mile Creek

- This road is located west of Mendon at the end of 600 North and warrants earlier closure due to severe erosion of poor soils and excessive maintenance of roadway.

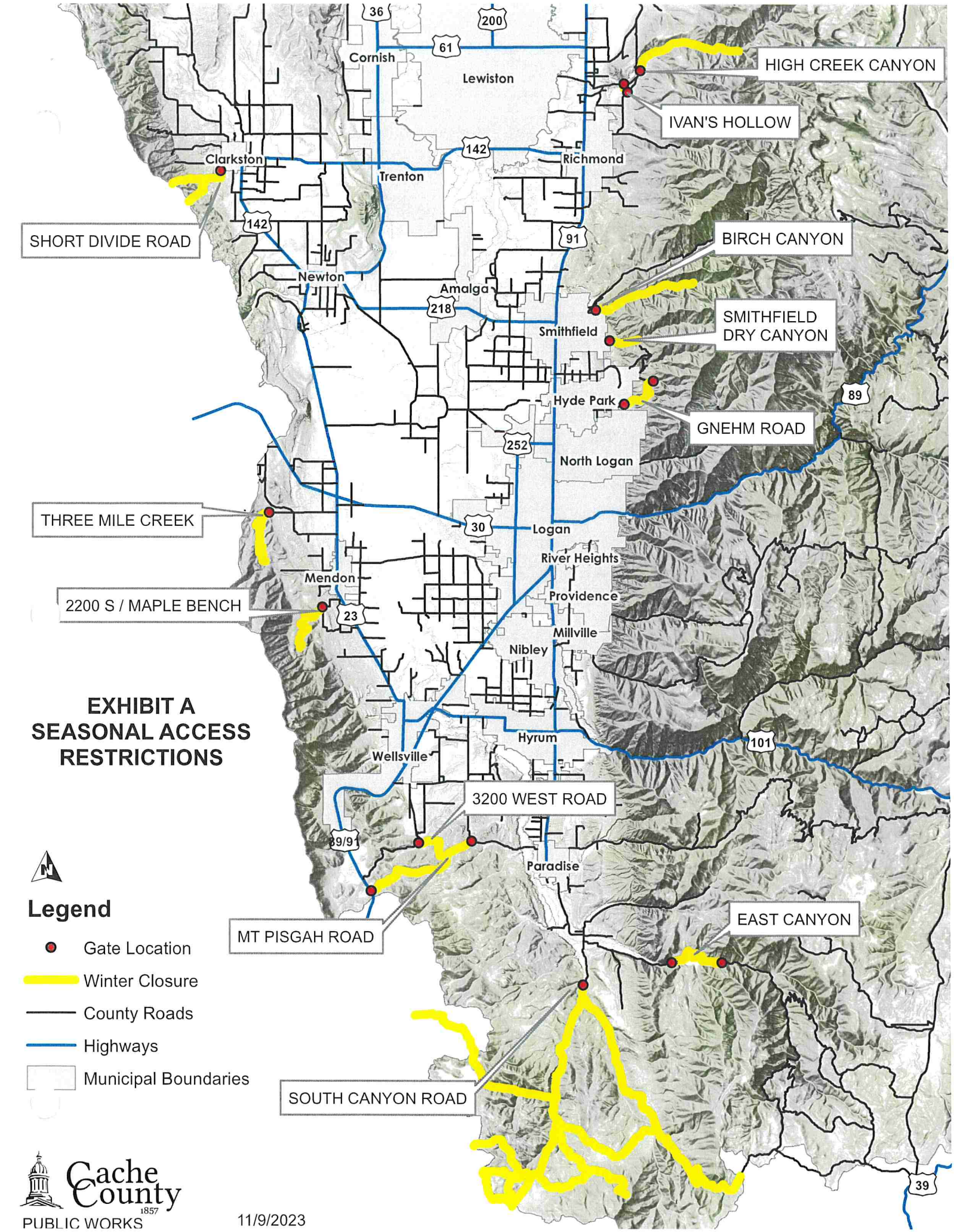

EXHIBIT A
SEASONAL ACCESS RESTRICTIONS

Legend

- Gate Location
- Winter Closure
- County Roads
- Highways
- Municipal Boundaries

Cache County
1857
PUBLIC WORKS

11/9/2023