BOX ELDER COUNTY
DRAFT Resource Management Plan

April 2017

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)
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)
resource management plan (RMP)
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)

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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 (Utah Code §63L-6-103) within Box Elder 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. The code further 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 Box Elder 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.

Elements of the Countywide Resource Management Plan

The resources included in this CRMP are examined and discussed from the same perspectives throughout the document. Each **Section** begins with a definition 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 Box Elder 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.

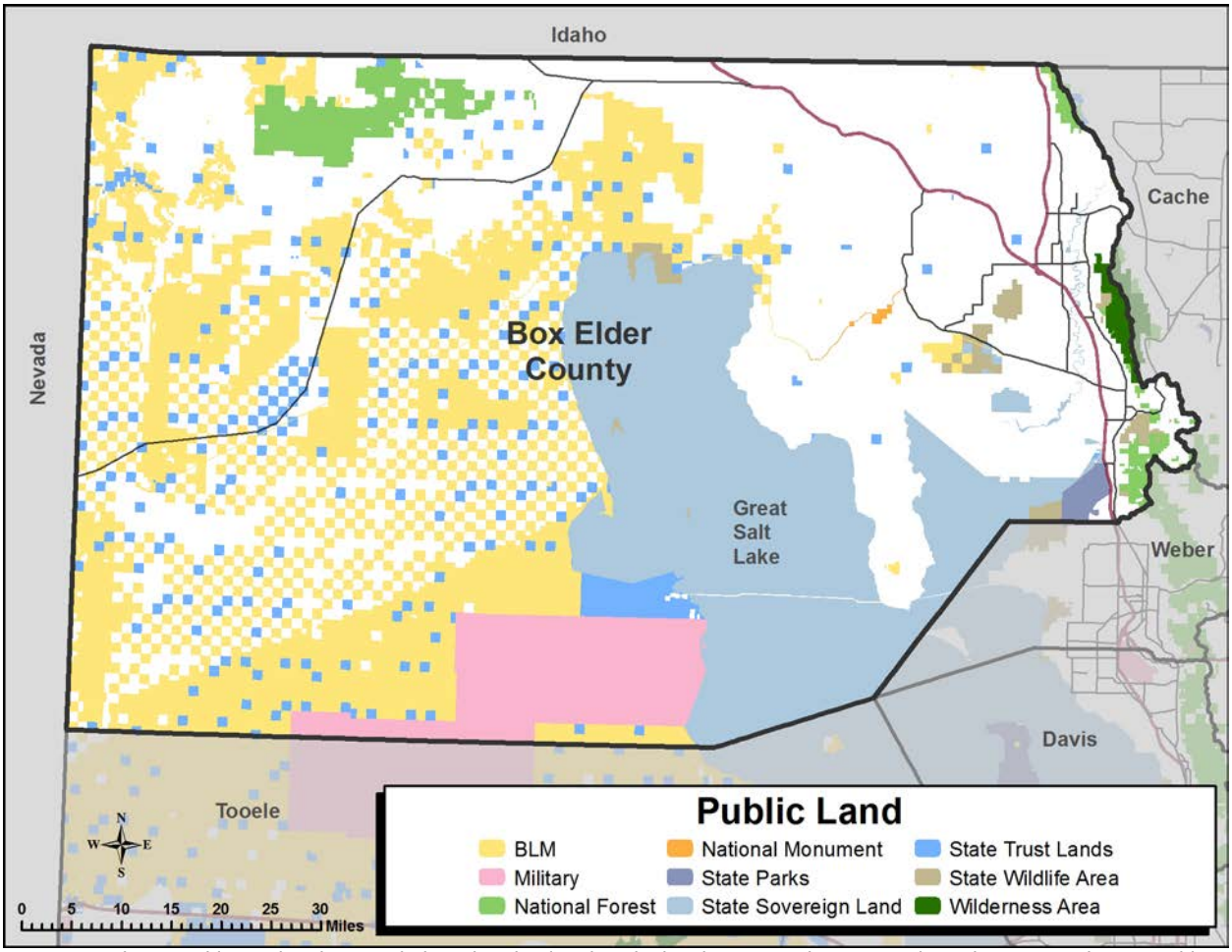
The **Legal Context** subsection provides specific federal and state laws that specifically apply to the resource, along with an overview of their implications for management. Most important here are the major legislation establishing procedures, determining authority, and specific regulations managers 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 the Box Elder 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 Box Elder 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.



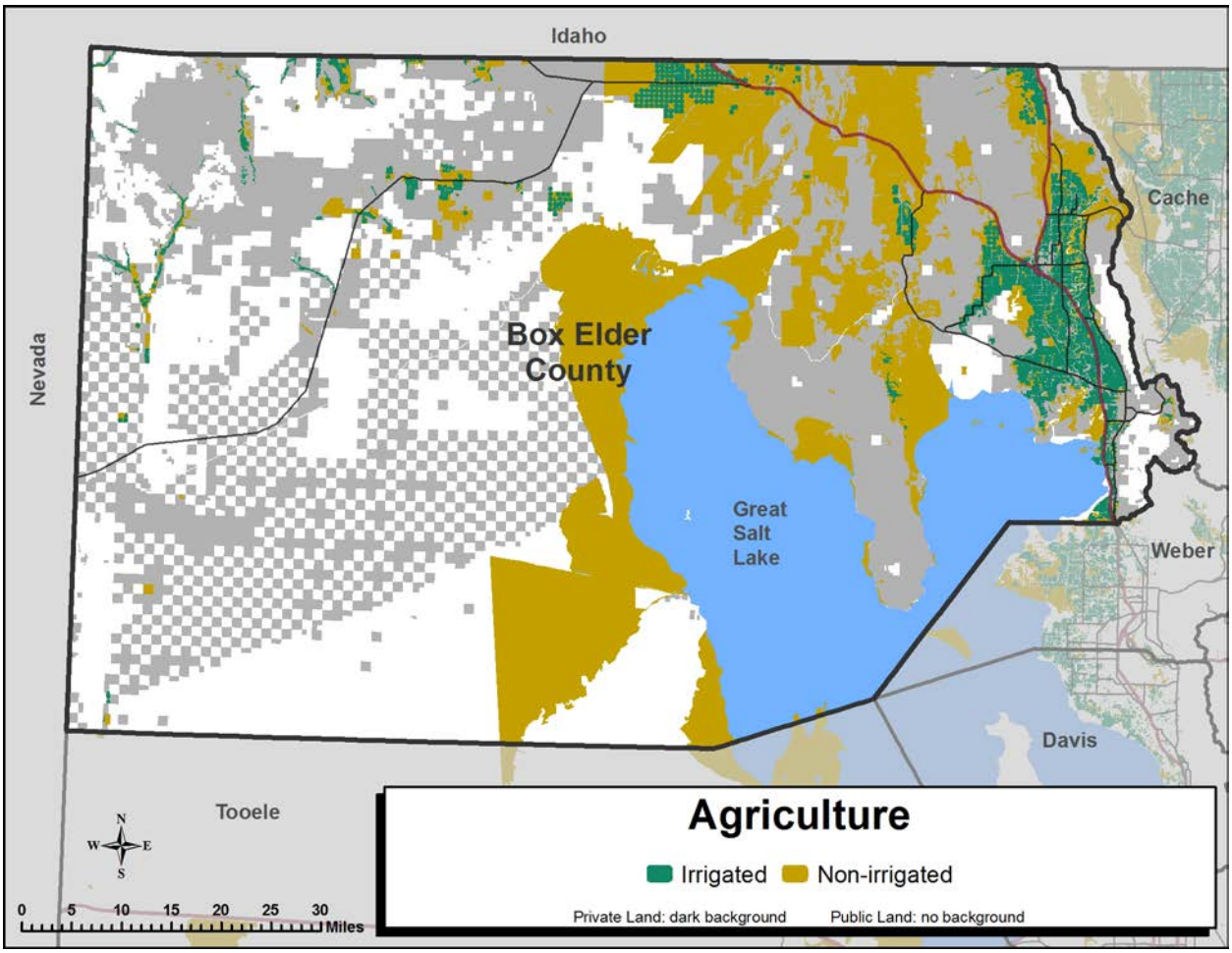
Source: Land Ownership, Updated as needed, Utah School and Institutional Trust Lands, Access via Utah Automated Geographic Reference Center.

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 Box Elder County, agriculture became an integral endeavor in the region. 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 and pioneer settlers. 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.

1.1 Management Setting

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 Box Elder County and is an important part of the lifestyle of its residents. In Box Elder County, agricultural activities occur primarily on private lands, though some agricultural leases exist on lands owned by Utah School and Institutional Trust Lands Administration. Agriculture 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.

Findings

Table 1.1 shows how the number and size of farms in Box Elder County has changed since 2002, based on statistics from the US Department of Agriculture.

Table 1.1. Number and size of farms in Box Elder County from 2002, 2007, and 2012.

FARM DATA	2002	2007	2012
Number of farms	1,113	1,235	1,235
Land in farms (acres)	1,400,759	1,170,736	1,170,736

Source: US Department of Agriculture National Agricultural Statistics Service.[1,2,3]

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

Box Elder County wishes to protect the economic viability of agricultural and closely associated livestock industries within the county through continued access to public lands for grazing. To support viability of these industries, vegetation on public lands should be managed to provide maximum sustainable production of forage for livestock, which is an important component of agriculture in the county. The county also desires that watersheds on public lands are managed to maximize water yields and water quality to meet present and future needs, including water for agriculture and livestock.

1.3 Management Objectives and Associated Policies and Guidelines

1.3.1 Management Objective

Agriculture, though recognized as an important component of Box Elder County, is not currently a resource consideration of public land planning. The primary objective of this section is to encourage activities on public lands that have positive effects on agriculture and other closely associated private industries.

Policies and Guidelines

- Maintain active county and citizen participation in federal and state public land and resource planning processes.[4]

- Maintain working partnerships with public land and resource management agencies.[4]

- Support responsible use and development of public land resources.[4]

1.3.2 Management Objective

Encourage continued access to grazing lands, grazing permits, and support maximum sustainable animal unit months (AUMs).

Policies and Guidelines

The county will actively participate in rangeland management activities.[4]

1.3.3 Management Objective

Encourage vegetation management to support maximum sustainable forage growth.

Policies and Guidelines

- Establish a winter forage assessment by utilizing the Box Elder County Resource Management Committee to investigate cost-effective methods to assess forage conditions and impediments to improving forage production (e.g., water availability, noxious weed infestations, sub-optimal vegetation, past grazing practices). This should be an area-wide investigation of both private and public winter grazing lands. Contractor support, using the funding sources noted above, may be the most effective way to produce this assessment.[5]

- Implement forage improvements. Based on the results of the winter forage assessment, seek funding for recommended improvements. Start with projects on private land to avoid extended timeframes associated with National Environmental Policy Act review and other agency procedures.[5]

- Encourage grazing of invasive plants, such as early season grazing of cheatgrass or other annual non-native invasive plants.[5]

- Increase management flexibility in regard to grazing on public lands. Work with the US Bureau of Land Management, the US Forest Service, and individual grazing permittees to implement changes in permit terms and conditions necessary to allow efficient use and maintenance of new winter forage resources.[5]

- To provide data required for more flexible management, solicit agency assistance to train willing and committed livestock producers in monitoring range conditions on private and public lands to develop experience with permittee-assisted monitoring.[5]

1.3.4 Management Objective

Take all reasonable steps to preserve, maintain and where reasonable and as determined by Box Elder County, develop water resources.[4]

Policies and Guidelines

- Provide for the protection of water rights and reasonable development of additional water rights in cooperation with the Utah State Water Engineer.

- Coordinate with water resource management entities, especially water districts and canal companies, to ensure water supplies and water delivery infrastructure will meet growth needs.

- Implement watershed protections and vegetation management to maintain availability of water for beneficial uses and to protect water quality.

- Implement watershed protections and vegetation management to maintain availability of water for beneficial uses and to protect water quality.

- Consider and help implement in-stream water flows for the benefit of aquatic habitats and sensitive species while recognizing existing water rights.

1.4 References

[1] 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] 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).

[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 March 23, 2017).

[4] Box Elder County. 1998. Box Elder County General Plan, County Goals, Objectives, and Action Steps, (Updated 2011). Resolution No. 11-03.

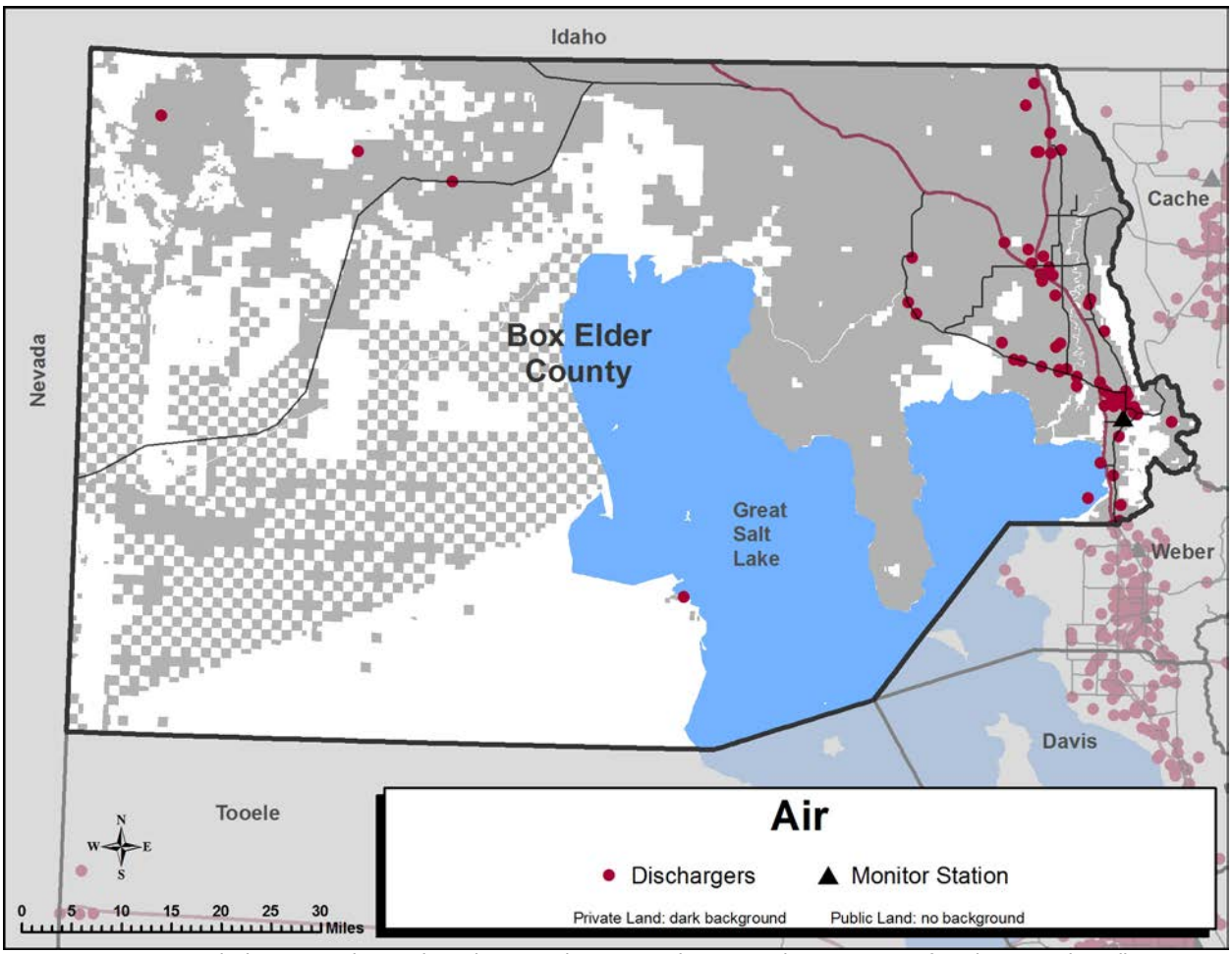
[5] Cirrus Ecological Solutions, LC. & Logan Simpson Design, Inc. 2013. West Box Elder Coordinated Resource Management Plan. http://utahcbcp.org/files/uploads/boxelder/WBECRMPlanJan2013.pdf, (accessed April, 14, 2017).

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: DWQNPDESDischargers and DAQAirMonitorByStation, Date unknown, Utah Department of Environmental Quality, Access interactive map https://enviro.deq.utah.gov.

2.1 Management Setting

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, enforced by the EPA and the Utah Division of Air Quality (DAQ) in Utah, 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): non-attainment areas, maintenance areas, and attainment areas. Attainment and non-attainment areas are those with air quality better or worse than the NAAQS (respectively). If an area is designated non-attainment, 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 non-attainment 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.

The use of Unmanned Aerial Vehicles (UAVs) and Unmanned Aerial Systems (UASs), often called drones, is an emerging issue in Box Elder County. The Federal Aviation Administration (FAA) provides regulatory oversight for UAV and UAS operation. Box Elder County has a current airspace definition for UAV and UAS with a FAA certificate, but the county would like to expand airspace for UAV and UAS operation. Because the use UAVs and UASs is relatively new, FAA rules and regulations are in flux and subject to change.

Findings

Parts of eastern Box Elder County are designated non-attainment for small particulate matter pollution (PM 2.5).[1]

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 Box Elder 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.

Federal law governing the operation of UAVs and UASs is found in 14 USC §107-2 et seq. (Small Unmanned Aircraft Systems). This law governs airspace, operator requirements, and other issues related to UAVs and UASs.

2.2 Desired Future State

Box Elder County desires to improve or maintain air quality to protect and improve public health, environmental health, and scenic visibility.

Box Elder County desires to identify additional airspace available for UAV and UAS flights.

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.

Policies and Guidelines

- Support or conduct public awareness campaigns about current air quality conditions, forecasts, and activities/practices individuals can do to reduce air pollutant emissions.

- Coordinate with Box Elder County Sherriff and Utah Division Wildlife Resources to manage illegal motor vehicle traffic on dirt roads around the Great Salt Lake and on exposed lake beds.

- Ensure that management activities and proposed projects meet state and federal air quality standards.

2.3.2 Management Objective

Promote compliance with emission standards for industries that use Great Salt Lake resources.

Policies and Guidelines

- Coordinate with the DAQ to evaluate emissions of all criteria pollutants associated with proposed projects and work with DAQ to identify appropriate mitigation strategies to offset major pollutant sources.[2]

- Limit airborne particulates by mitigating human-made disturbances. This may include requiring dust-control measures and revegetation for all ground-disturbing projects.

2.3.3 Management Objective

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

Policies and Guidelines

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

- Use local air quality measures, not Salt Lake County or other region, to determine when conditions are appropriate for prescribed fire.

2.3.4 Management Objective

Consider designating conditions or areas that specifically allow UAV and UAS flights, considering safety, disturbance to humans or wildlife, privacy concerns, potential benefits, and federal law.

Policies and Guidelines

Federal and State laws and rules regarding this issue are quickly changing. The county must stay current on regulations governing the use of UAVs and UASs.

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).

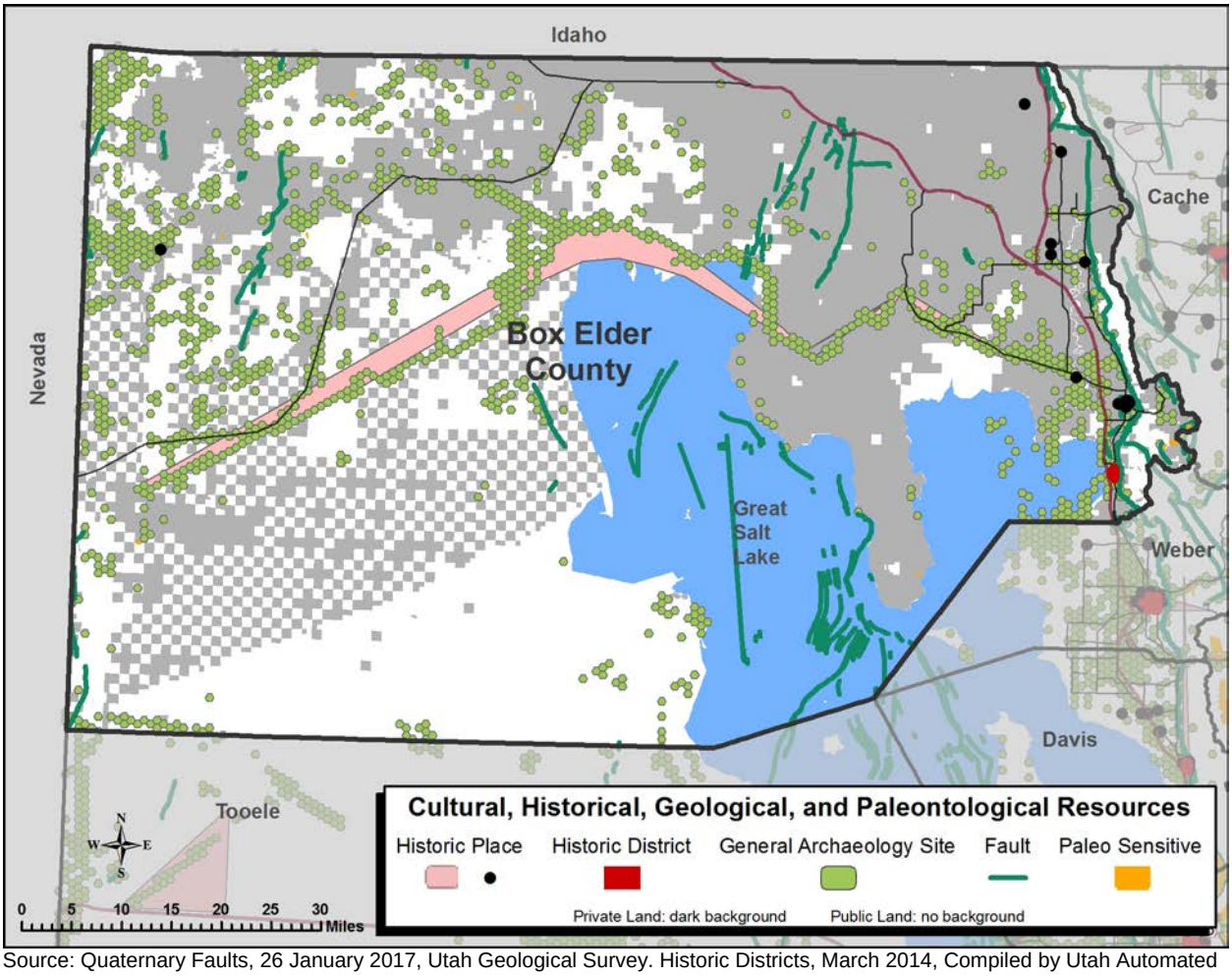
[2] Utah Division of Forestry, Fire, and State Lands. 2013. Final Great Salt Lake Comprehensive Management Plan and Record of Decision. Utah Department of Natural Resources.

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 its 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

Context

Box Elder County has a rich and diverse history. Several sites within the county played important roles in the early development of the area, the state, and even the nation. For instance, the transcontinental railroad was finalized at Promontory Summit in 1869, which connected the eastern and western United States for the first time. This greatly decreased cross-county travel times and facilitated freight movement throughout the county.

As settlers moved into the area and diverted water for human uses, the vast natural marshes along Bear River and its entrance into the Great Salt Lake began to dry. In 1928 the Bear River Migratory Bird Refuge was created by presidential proclamation. Since that time the "Bird Refuge," as it is called by locals, has been an attraction and asset to the community.

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.

Box Elder County's famous "Fruit Way" along Highway 89 has long been an important cultural part of the county. People from within and outside the county come to the Fruit Way each year to buy fresh produce.

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. There are some geologic units in Box Elder County that are likely to contain fossils, though these resources are much more abundant in other parts of the state.[1]

Geological Resources

The Great Salt Lake is a remnant of ancient Lake Bonneville, which was at its highest point during the last ice age 14,000–32,000 years ago.[2] Over time, as Lake Bonneville receded, minerals in the water were concentrated in the remaining water. This resulted in the Great Salt Lake, which is several times saltier than the ocean. These minerals are now harvested for commercial purposes.

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 existing and former small towns exist, 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. 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 negotiate 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.

Using the Potential Fossil Yield Classification system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level. It is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the

relative abundance of significant localities is intended to be the major determinant for the class assignment.

The Potential Fossil Yield Classification system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources. The classification should be considered at an intermediate point in the analysis, and should be used to assist in determining the need for further mitigation assessment or actions.

The descriptions for the classes below are written to serve as guidelines rather than as strict definitions. Knowledge of the geology and the paleontological potential for individual units or preservational conditions should be considered when determining the appropriate class assignment. Assignments are best made by collaboration between land managers and knowledgeable researchers.

Class 1 – Very Low. Geologic units that are not likely to contain recognizable fossil remains.

- Units that are igneous or metamorphic, excluding reworked volcanic ash units.
- Units that are Precambrian in age or older.

1. Management concern for paleontological resources in Class 1 units is usually negligible or not applicable.

2. Assessment or mitigation is usually unnecessary except in very rare or isolated circumstances.

The probability for impacting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is non-existent or extremely rare.

Class 2 – Low. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils.

- Vertebrate or significant invertebrate or plant fossils not present or very rare.
- Units that are generally younger than 10,000 years before present.
- Recent aeolian deposits.
- Sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

1. Management concern for paleontological resources is generally low.
2. Assessment or mitigation is usually unnecessary except in rare or isolated circumstances.

The probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

Class 3 – Moderate or Unknown. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.

- Often marine in origin with sporadic known occurrences of vertebrate fossils.

- Vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently; predictability known to be low.

  (or)

- Poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance.

Class 3a – Moderate Potential. Units are known to contain vertebrate fossils or scientifically significant non-vertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.

Class 3b – Unknown Potential. Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed. The unknown potential of the units in this Class should be carefully considered when developing any mitigation or management actions.

1. Management concern for paleontological resources is moderate; or cannot be determined from existing data.

2. Surface-disturbing activities may require field assessment to determine appropriate course of action.

This classification includes a broad range of paleontological potential. It includes geologic units of unknown potential, as well as units of moderate or infrequent occurrence of significant fossils. Management considerations cover a broad range of options as well, and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and a lower concern about affecting significant paleontological resources.

Class 4 – High. Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases.

Class 4a – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions. Illegal collecting activities may impact some areas.

Class 4b – These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.

- Areas of exposed outcrop are smaller than two contiguous acres.

- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.

- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

    1. Management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed action.

    2. A field survey by a qualified paleontologist is often needed to assess local conditions.

    3. Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered.

    4. Class 4 and Class 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geologic mapping at an appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

The probability for impacting significant paleontological resources is moderate to high, and is dependent on the proposed action. Mitigation considerations must include assessment of the disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.

Class 5 – Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation.

Class 5a – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from surface disturbing actions. Unit is frequently the focus of illegal collecting activities.

Class 5b – These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.

- Areas of exposed outcrop are smaller than two contiguous acres.

- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.

- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

    1. Management concern for paleontological resources in Class 5 areas is high to very high.

    2. A field survey by a qualified paleontologist is usually necessary prior to surface disturbing activities or land tenure adjustments. Mitigation will often be necessary before and/or during these actions.

    3. Official designation of areas of avoidance, special interest, and concern may be appropriate.

The probability for impacting significant fossils is high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities.

Geologic Hazards

The Utah Geologic Survey provides technical information and assistance regarding earthquakes and geologic hazards. The Utah Geologic Survey preliminary Landslide History Database outlines 16 historic landslides in Box Elder County.

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: 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 maintains a list of qualified paleontologists with permits for state lands in Utah, and but the BLM does maintains 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 Box Elder 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 National Environmental Policy Act (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

Box Elder County desires to support land use and development practices that preserve historical and cultural sites and structures, cultural events and activities, and scientifically important paleontological resources.

Box Elder County desires to manage geological and paleontological resources to safeguard their scientific and educational values as well as to promote public benefit and enjoyment. Box Elder County desires to ensure that land use activities on public lands do not increase the risk from geologic hazards.

3.3 Management Objectives and Associated Policies and Guidelines

3.3.1 Management Objective

Implement land use and development strategies that protect against direct and substantial impacts to nationally recognized cultural resources, both historical and archaeological, including prehistoric rock art, three-dimensional structures and other cultural resources artifacts and sites recognized as culturally important and significant by the State Historic Preservation Office. Coordinate early with appropriate

agencies on proposed actions to identify potential cultural and historical resource issues.

Policies and Guidelines

- Work with federal and state agencies to: identify and survey historical and cultural resources; explore alternative historical/cultural site and easement acquisition strategies; develop and coordinate a collaborative process of regular consultation with the State Historic Preservation Office; and, support and coordinate with the preservation planning efforts of other entities.

- Establish a historic preservation committee to oversee the preservation ordinance and to educate, advocate, and provide assistance in historic preservation efforts. Educate residents through the historic preservation committee by holding workshops on rehabilitation, financial incentives, and other information. Establish a clearinghouse of information on preservation, loans, grants, construction and renovation, and landscaping.

- The preservation of cultural resources can be supported by inventory, education and protection programs.[3]

- Encourage the conservation, restoration, and preservation of those properties already listed on the National Register of Historic Places. Encourage property owners to conduct cultural resource surveys on significantly sized projects, or projects which are located in proximity to areas identified as having cultural resources. Work with owners of properties with significant cultural resources to identify alternative funding sources to avoid, reduce, or mitigate impacts on the resources. Seek adaptive uses as an alternative to demolishing or significantly altering historic structures.

- Reasonable mineral development can occur while at the same time protecting these sites. Reasonable and effective stipulations and conditions to protect the cultural resources should accompany decisions to issues mineral leases, permit drilling, or permit seismic activities. Such activities should not be disallowed merely because they are in the immediate vicinity to cultural resources if it is shown that such activities will not irreparably damage those resources.[4]

3.3.2 Management Objective

Implement land use and development strategies that preserve locations of scientifically important paleontological resources on public lands.

Policies and Guidelines

- Consult the Utah State Paleontologist to assess potential for paleontological resources with a project or planning area.

- Discourage illegal collection activities through educational efforts and law enforcement.

- Support and coordinate with the paleontological protection and education of other entities.

3.3.3 Management Objective

Implement land use and development strategies that protect life and property from geologic hazards.

Policies and Guidelines

- Areas of erosion on public land will be identified and evaluated to identify sources and determine improvements.[5]

- Fit development to the existing terrain, to prevent or reduce all adverse impacts in hazardous areas.[6]

- Require the avoidance or mitigation of environmental hazards such as flooding, landslides, and subsidence or fissure zones as part of the development review process.[4]

3.4 References

[1] Utah Geological Survey, 2014. Unofficial Utah Geological Survey Paleontological Sensitivity Area. Web map. https://www.arcgis.com/home/item.html?id=6e64b20d1efb460e9c302e9b3317af34 (accessed April, 2017).

[2] Utah Geological Survey. nd. Commonly Asked Questions about Utah's Great Salt Lake and Lake Bonneville. Webpage. http://geology.utah.gov/popular/general-geology/great-salt-lake/commonly-asked-questions-about-utahs-great-salt-lake-lake-bonneville/#toggle-id-1. (accessed April 14, 2017).

[3] Salt Lake County. 2004. Copperton Township General Plan. Salt Lake County Public Works Department.

[4] Box Elder County. 1998. Box Elder County General Plan, County Goals, Objectives, and Action Steps, (Updated 2011). Resolution No. 11-03.

[5] 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).

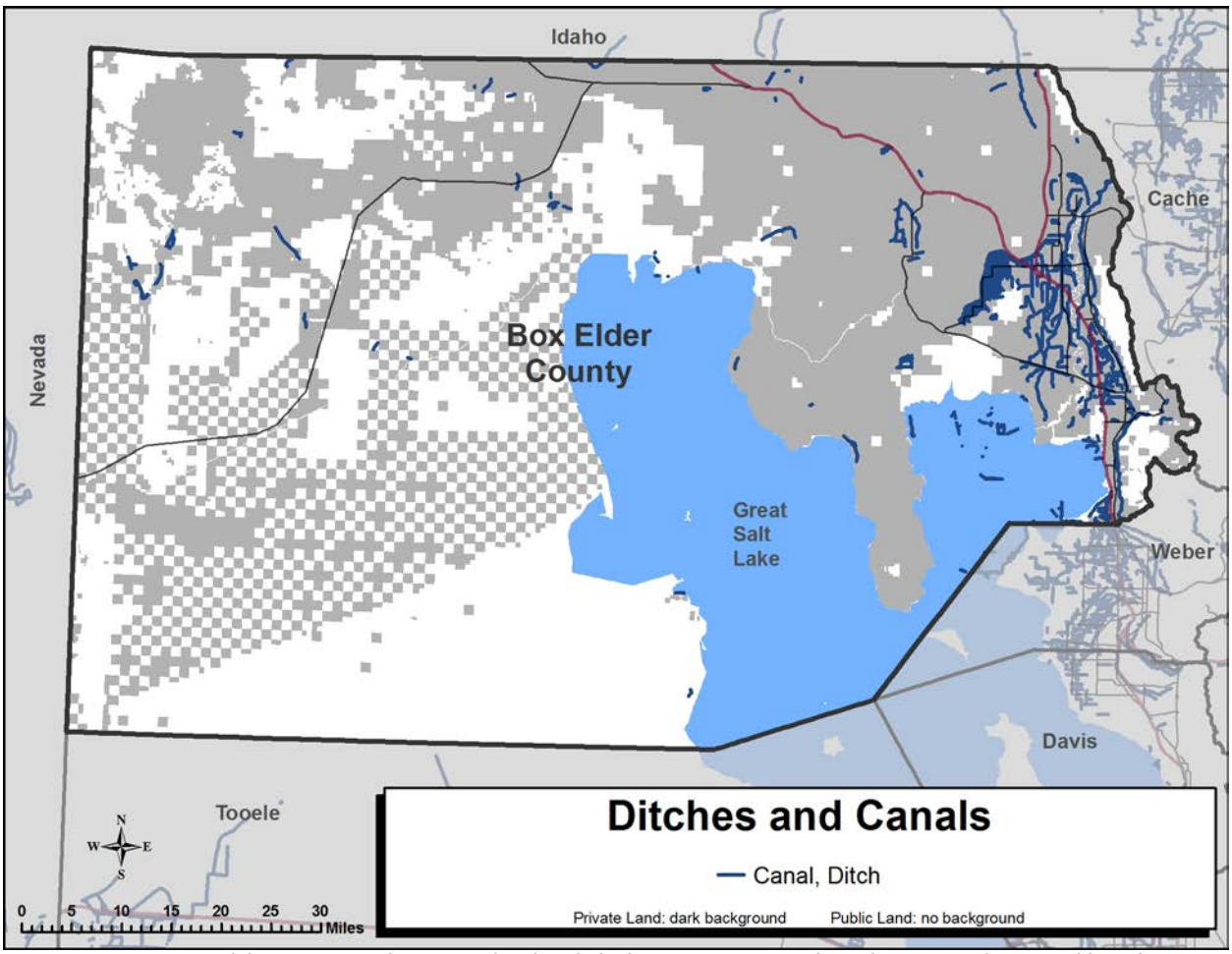
[6] Box Elder County. 1998. Box Elder County General Plan, Cultural/Historic Areas, Community Dev & Land Use (Updated 2011).

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: Streams NHD High-Res, Date unknown, National Hydrologic Dataset, Access via Utah Automated Geographic Reference Center.

4.1 Management Setting

Context

Dams, diversions, 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 are an integral element for agricultural

viability in Box Elder County, are relied upon for urban landscape watering and gardens, and distributing water throughout the Bear River Migratory Bird Refuge. The use, upgrade, and maintenance of the Utah's network of canals, ditches, and dams continues today. Many of the canals and ditches remain open, but over time many have been lined or piped to improve operational efficiency and for safety reasons.

Findings

According to the National Hydrographic Dataset Box Elder County has 492.8 miles of ditches, 43.9 miles or 9 percent are on public lands (Table 4.1).

Table 4.1. Miles and Percentages of Ditches/Canals in Box Elder County.

LANDOWNER	MILES OF DITCHES/CANALS	PERCENTAGE
Federal	20.1	4
State	23.8	5
Private	448.9	91
Total	492.8	100

Source: National Hydrographic Dataset.

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 Box Elder 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 Box Elder 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

Box Elder County desires to protect and improve existing and future water conveyance systems.

4.3 Management Objectives and Associated Policies and Guidelines

4.3.1 Management Objective

Establish new water storage sites in West Box Elder.[1]

Policies and Guidelines

Seek funding for canal leakage study once planning for new storage sites for saved water is underway.[1]

4.3.1 Management Objective

Encourage maintenance of and support improvements of existing infrastructure.

Policies and Guidelines

- Seek funding for canal leakage study.[1]
- Coordinate with agencies and water companies to protect existing water conveyance systems.

4.4 References

[1] 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).

5. ECONOMIC CONSIDERATIONS

Box Elder County is primarily a rural county with population of just over 50,000. At 5,594 square miles, the county is the fourth largest county in Utah. Brigham City is the county seat and has the highest population of the 16 incorporated cities and towns.

Related resources:

- Recreation and Tourism
- Land Use

5.1 Management Setting

Context

The nonfarm economy of Box Elder County is led by manufacturing jobs. Farming and ranching make up a portion of the county's economy and provides an important part of the lifestyle of its residents.

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). Box Elder County recognizes the obligation of federal land managers to manage public lands in the public's interest according to nationwide perspectives. However, due to the high percentage of public land within Box Elder County, the county is more directly affected by agency management decisions.

Box Elder County receives an annual Payment in Lieu of Taxes (PILT) from Federal government based on the amount of Federal lands in the county that do not earn property taxes. In 2015 Box Elder County received $3,060,328 based on 1,201,160 acres of federal lands.[1]

The largest employers in Box Elder County are Autoliv, Orbital ATK, Nucor Corporation, and Walmart. The top three non-agricultural employers are related to Manufacturing and Trade, Utilities, and Government.[2] Farms cover more than 1 million acres of private land in the county and include more than 100,000 acres of irrigated cropland. The market value of agricultural crops sold in 2012 was approximately $170 million.[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 percent 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 percent 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

Box Elder County desires to continue to support the rural character of the area, including agriculture, ranching, industries, and resources that sustain the county's economy while maintaining water quality, air quality, wildlife, and habitat on public lands.

Economic development in Box Elder County should be supportive and consistent with family values.[3]

The county is committed to:

- Diversifying the nature and number of contributors to the economic base.
- Encouraging growth that is consistent with and embraces the security of the county's quality of life.
- Preserving and strengthening the viability of the agriculture sector of the county economy.

5.3 Management Objectives and Associated Policies and Guidelines

5.3.1 Management Objective

Identify and pursue a target growth rate that encourages a diversified economic base.[4]

Policies and Guidelines

- Maintain (and update as new information is available) Box Elder County's economic and demographic profile.

- Verify and establish a target growth rate for the County.[4]

5.3.2 Management Objective

Coordinate and integrate economic development planning with the county General Plan.[4]

Policies and Guidelines

- Participate in the implementation of the county's General Plan. Encourage revisions to the plan as necessary.[3]

- Ensure agency officials are aware of and familiar with Box Elder County's General Plan, the county's economic and demographic profile, and other relevant studies. Clarify with agency personnel that these adopted county documents are to be considered initial county input and positions in all agency planning and decision-making processes.

5.3.3 Management Objective

Enhance retention, expansion, and recruitment of businesses and create an attractive environment for retail, manufacturing, and large employers.[4]

Policies and Guidelines

Provide assistance to local communities as they identify, attract, and recruit missing retail components. Increase recognition and visibility of the value and benefits to local businesses and services available from the Economic Development Board and Staff. Retain and continue to support current employers. Take a leadership role in supporting small businesses. Train recruiting efforts among those businesses that assist in achieving the target growth rate, diversify the economy, and further the Mission and Vision for economic development.[3]

5.3.4 Management Objective

Preserve and strengthen the viability of the agricultural sector on the economy.[4]

Policies and Guidelines

- Increase awareness of the role that Agriculture plays in the county's economy.[4]

- Ensure agency officials are aware of and familiar with Box Elder County's General Plan, the county's economic and demographic profile, including the relative importance that livestock grazing on public lands plays in the local agricultural economy.

5.4 References

[1] US Department of Interior, 2017. Payment in Lieu of Taxes, County Payments. https://www.nbc.gov/pilt/counties.cfm (accessed April 10, 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/boxelder.html (accessed April 17, 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 March 23, 2017).

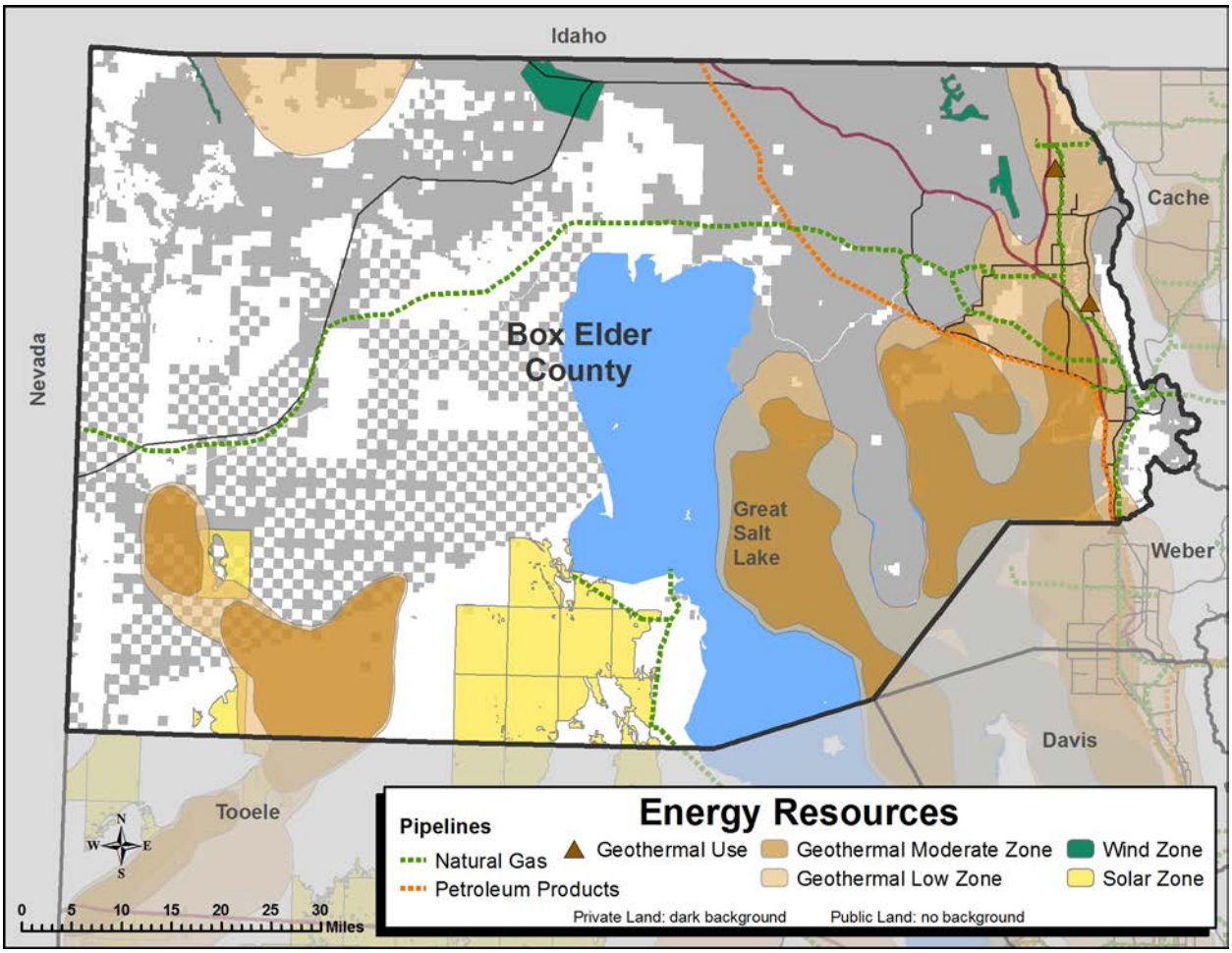
[4] Box Elder County. 1998. Box Elder County General Plan, Agriculture.

6. ENERGY RESOURCES

Public and private utilities draw upon Utah's renewable and nonrenewable resources to provide electricity and fuel (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. 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

Context

Energy resources includes the development and production of energy (fossil fuel and renewable) as well as the transmission of energy across public lands (powerlines, pipelines, etc.). Energy transmission projects on public lands may affect sensitive wildlife and other resources.

Planning for energy development on federal lands is managed by the US Forest Service (Forest Service) and the Bureau of Land Management (BLM). Energy development on State Sovereign Lands is managed by Forestry, Fire, and State Lands (FFSL) and State Institutional Trust Lands (SITLA). 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).

Findings

Box Elder County has a modest history of oil and gas development on Sovereign State Lands around Rozel Point. Box Elder has no current energy extraction (Table 6.1).[1]

Table 6.1. Number, type, and status of energy wells in Box Elder County.

WELL TYPE	NUMBER	STATUS	CUMULATIVE PRODUCTION
Oil well	47	Abandoned or Plugged	2,665 Barrels
Gas well	6	Abandoned or Plugged	0 Thousand Cubic Feet

Source: Utah Division of Oil, Oil, and Gas, Oil and Gas Well spatial data for Box Elder County.

Several large energy pipelines cross Box Elder County, including the 42-inch Natural Gas Ruby Pipeline operated by Kinder Morgan, several natural gas lines in the 8–12-inch range operated by Questar Gas, an 8-inch petroleum pipeline operated by Chevron, and several others. These pipelines cross private, state, and federal lands.

Box County has moderate potential for the production of solar energy based on a 2009 study by the Utah Renewable Energy Zones Taskforce.[2] This same study identified five locations in Box Elder County with potential to generate more than 500 megawatts of wind energy.[2] Geothermal energy potential also exists in Box Elder County with two geothermal sites (Crystal-Madsen and Utah Hot Springs) capable of generating 10 megawatts each.[2]

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 (DOI) 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

Development of the county's resources is important to present and future residents. It is the county's position that these resources can be developed in responsible manner. Operation conditions should

address potential conflicts with adjacent land uses and community values. Sites should be engineered and managed for environmental compatibility, aesthetics and reclamation.

Renewable energy resources in Box Elder County should be explored and developed to provide alternative energy supplies.

6.3 Management Objectives and Associated Policies and Guidelines

6.3.1 Management Objective

Achieve and maintain a continuing yield of traditional energy resources on public lands at the highest levels.[3]

Policies and Guidelines

- Support Utah Forestry Fire and State Lands policies to allow for new oil, gas, and hydrocarbon-leasing activities that are consistent with the long-term sustainability of Great Salt Lake, according to Utah Code §65A-10-8.[4]

- Box Elder County recognizes that it is technically feasible to access mineral and energy resources while preserving or, as necessary, restoring non-mineral and non-energy resources.[5]

- All available solid, fluid, and gaseous mineral resources on public lands should be seriously considered for their contribution or potential contribution to the Box Elder County economy.[5]

- Public lands shown to have reasonable mineral potential should be open to oil and gas leasing with reasonable stipulations and conditions that will protect the lands against unreasonable and irreparable damage to other significant resource values. This should include reasonable and effective mitigation and reclamation measures, and bonding for such, where necessary.[5]

- The waste of fluid and gaseous minerals within developed areas, except for those necessary for production, such as flaring, should be prohibited.[5]

- Any prior existing lease restrictions on public lands that are no longer necessary or effective should be modified, waived or removed.[5]

- Restrictions against surface occupancy should be modified, waived, or (if necessary) removed where it is shown that directional drilling is not ecologically necessary, not feasible from an economic or engineering standpoint, or where it is shown that directional drilling will, in effect, sterilize the mineral and energy resources beneath the area.[5]

- Applications for permission to drill that meet standard qualifications, including reasonable and effective mitigation and reclamation requirements, should be expeditiously processed and granted. Any moratorium that may exist against the issuance of additional mining patents and oil and gas leases on public lands should be carefully evaluated for removal.[5]

6.3.2 Management Objective

Encourage renewable energy resources on public lands including wind, solar, and geothermal.

Policies and Guidelines

Investigate opportunities for renewable energy resources such as wind, solar, geothermal, and ground source heat pumps, etc.[1]

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] Utah Department of Natural Resources, Utah Geological Survey. 2009. Utah Renewable Energy Zones Task Force Phase I Report, Renewable Energy Zone Resource Zone Identification.

[3] Box Elder County. 1998. Box Elder County General Plan, Land Use Element, Mineral Extraction and Gravel Pits, Community Dev & Land Use p.4.

[4] Utah Division of Forestry, Fire, and State Lands. 2013. Final Great Salt Lake Comprehensive Management Plan and Record of Decision. Utah Department of Natural Resources.

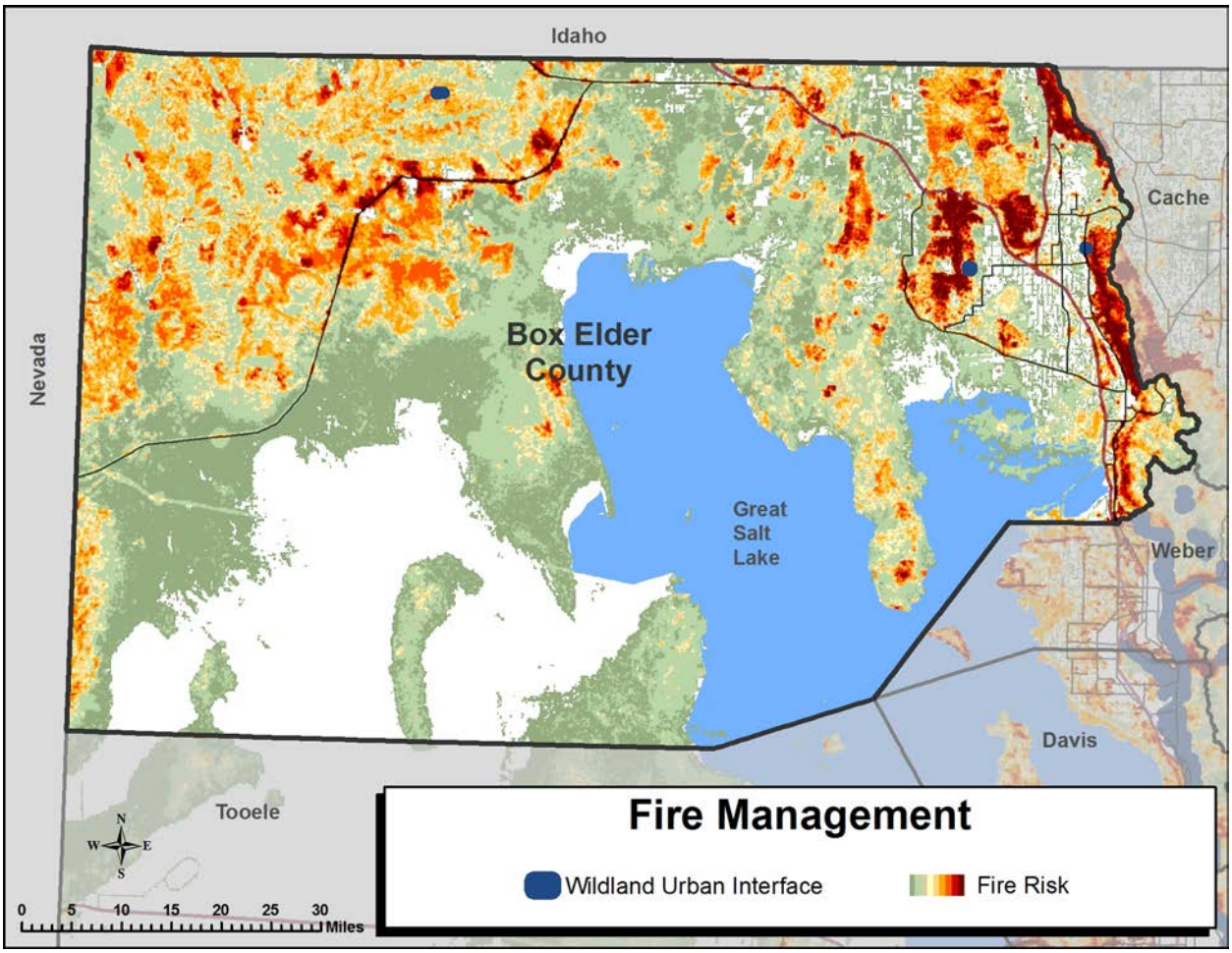
[5] Box Elder County. 1998. Box Elder County General Plan, County Goals, Objectives, and Action Steps, (Updated 2011). Resolution No. 11-03.

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: Urban Interface Areas, 1999, Compiler unknown, Access via Utah Automated Geographic Reference Center. Utah Fire Risk Index, 2013, West Wide Risk Assessment, Utah Division of Forestry, Fire, and State Lands.

7.1 Management Setting

Context

Wildfire is the most prevalent disturbance to natural resources in Box Elder County with the threat of wildfire greatest on its public lands. Fire suppression is expensive to taxpayers. With expected increase in temperatures, variation in precipitation pattern, and longer drought periods, fires suppression costs are

also projected to rise. Effective fire management includes elements of wildfire prevention, mitigation, and preparedness.

Findings

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 Box Elder County wildland fire statistics since 2010 (Table 7.1).[1]

Table 7.1. Nationally reported wildland fires and acreage burned in Box Elder County since 2010.

YEAR	NUMBER OF FIRES	ACREAGE BURNED
2010	1	178
2011	3	6,023
2012	6	7,799
2013	7	13,047
2014	0	-
2015	0	-
2016	4	27,142

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

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 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

Box Elder County supports controlled wildland fire use and prescribed fire on public lands, coordinated

with Box Elder County, as part of a strategy to reduce potential for uncharacteristic high-intensity wildfires and insect epidemics, and to provide for ecosystem maintenance and restoration consistent with land uses and historic fire regimes where it does not threaten adjacent development.

Box Elder County supports vegetation management strategies to reduce risk of property damage and uncharacteristic fires and to maintain vegetation habitats within historic range of variation. Additionally, Box Elder 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

Where and when appropriate, allow wildland fires to burn as a management tool to reduce fuel loads, maintain and restore ecosystem processes, and for other land use goals.

Policies and Guidelines

- When life and property are not at risk support wildland fire use, the allowing of a wildfire to burn as a natural component of the ecosystem.

- Coordinate wildland fire efforts with county, state, and federal agencies.

7.3.2 Management Objective

Where and when appropriate, use prescribed fire as a management tool to reduce fuel loads, maintain and restore ecosystem processes, and for other land use goals.

Policies and Guidelines

- Prescribed fire will be used as a resource management tool.[7]

- Increase the active use of fire to return fire dependent ecosystems to proper functioning and to reduce hazardous fuels.[8]

- Coordinate prescribed fire and controlled wildlands fire efforts with county, state and federal agencies.

- Use local air-quality measures, not Salt Lake County or other regions, to determine when conditions are appropriate for prescribed fire and controlled wildland fire.

7.3.3 Management Objective

Support vegetation management activities to reduce risk of property damage and uncharacteristic fires and to maintain vegetation habitats within historic range of variation.

Policies and Guidelines

- Conduct vegetation management to maintain or return vegetation communities within their historic range of variation that sustains habitats for viable populations of species.

- Focus on approximating natural disturbances and processes by restoring composition, age class diversity, patch sizes, and patterns for all vegetation types.[8]

- Fuel load reduction projects through thinning, harvesting, and other mechanical means.

7.3.4 Management Objective

Support wildland fire suppression when structures and lives are threatened.

Policies and Guidelines

- Have comprehensive wildland fire emergency response plans and share them with the community.
- Identify high wildland fire hazard zones.
- Adopt wildland-urban interface building ordinances to reduce fire risk.
- Reach out to citizens occupying the wildland-urban interface on preparing for wildfire event.
- Include municipal and volunteer fire departments in wildland fire training for effective fire response.
- Utilize smoking and fire bans when fire danger conditions become hazardous.
- Educate and inform public when fire danger rises throughout a fire season.

7.3.5 Management Objective

Support the State Wildland Fire Suppression Fund.

Policies and Guidelines

Participate in the State Wildland Fire Suppression Fund.[9]

7.3.6 Management Objective

Support management actions that reduce hazardous fuel loads in a manner that does not damage survey monuments or if damaged results in reestablishment of monuments.

Policies and Guidelines

When management actions result in damaged or destroyed survey monuments require responsible party or agency to see that the survey monuments be appropriately reestablished. The US Bureau of Land Management created a document to guide surveyors in reestablishing lost or obliterated monuments[10].

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] Wildland Urban Interface Wildfire Mitigation Desk Reference Guide, PMS 051, National Wildfire Coordinating Group. August 2014. https://www.nwcg.gov/sites/default/files/products/pms051.pdf Accessed 23 March 2017.

[7] 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).

[8] 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).

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

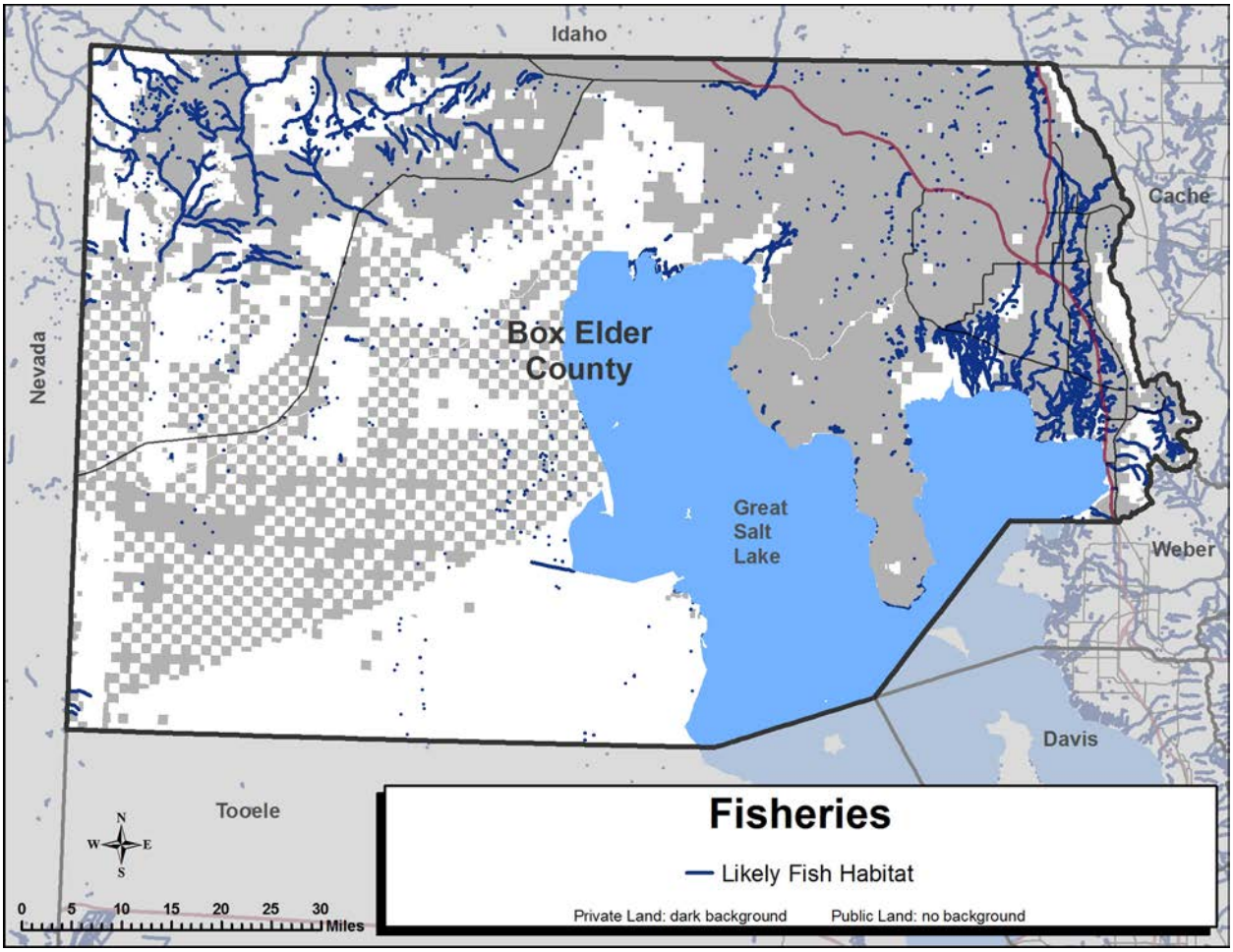
[10] Restoration of Lost or Obliterated Corners & Subdivision of Sections, a guide for surveyors. 1974, BLM. https://www.blm.gov/or/gis/geoscience/files/lost_oblit.pdf.

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, Date unknown, National Hydrologic Dataset, Access via Utah Automated Geographic Reference Center.

8.1 Management Setting

Context

Fishing and fisheries provide education and introduction to natural resources and their management. Sport fishing has significant, positive economic impact in Utah through retail and tourism. Brine fishing in the Great Salt Lake is a multimillion dollar industry in Utah. Aquatic invasive species (AIS) negatively impact fisheries and aquatic environments and are expensive to control.

Findings

The Utah Division of Wildlife Resources (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.

Aquatic invasive species (AIS) or aquatic nuisance species are defined by the 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 falsemussel. 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.

Dreissenid spp. have infested several waterbodies of 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 the reservoir. While not in Box Elder County, Deer Creek Reservoir is close enough to Box Elder County to warrant concern about the spread of *Dreissenid* into local waters.

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

Box Elder County desires to support native fish populations, sport fishing, recreation and tourism through the protection of aquatic habitat and water quality, including efforts to restore and improve water quality and riparian and in-stream habitats where degraded. Box Elder County desires to prevent new AIS from entering waterways in the county and supports the brine shrimp harvesting industry in the Great Salt Lake.

8.3 Management Objectives and Associated Policies and Guidelines

8.3.1 Management Objective

Maintain, improve, and restore riparian and in-stream habitats where degraded.

Policies and Guidelines

- Support efforts to restore riparian and in-stream habitats where degraded, recognizing the need to mimic natural processes when they can't be restored such as fish ladders [1] and natural hydrograph characteristics (timing, duration, temperature, etc) below dams and reservoirs.

- 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.[1]

- Support efforts by DWR and other organizations (such as Trout Unlimited) to provide native fishes a way to move past water diversion barriers, such as fish ladders, and installation of fish screens on irrigation infrastructure to reduce fish mortality in canals.

8.3.2 Management Objective

Support public education efforts which explain the transmission of AIS, proper cleaning protocols, and the impacts of AIS on local waterways and infrastructure.

Policies and Guidelines

Assist state efforts to facilitate boat cleaning/decontamination stations, inspection check-points, and angler/boater education efforts.[3]

8.3.3 Management Objective

Support water quality best management practices on public lands to improve water quality downstream in the Great Salt Lake.

Policies and Guidelines

Support efforts to maintain or improve water quality on public lands, recognizing the importance of water quality and salinity levels to the brine shrimp industry.[1]

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, Utah Aquatic Invasive Species Task Force. 2009. Utah Aquatic Invasive Species Management Plan, Publication No. 08-34.

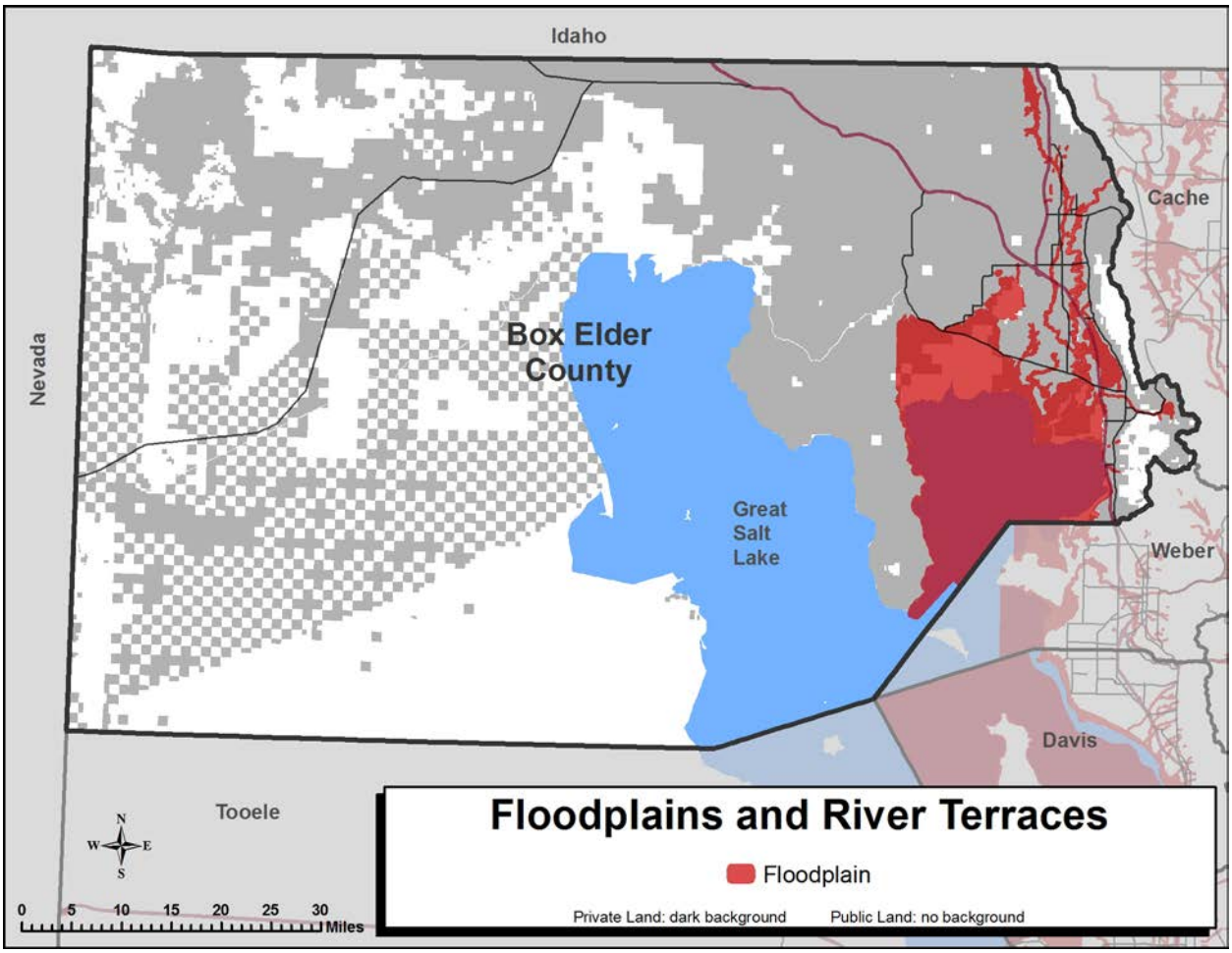
[3] US Department of the Interior, Bureau of Reclamation. 2012. Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species. Technical Memorandum No. 86-68220-07-05.

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 Box Elder County, Access via Utah Automated Geographic Reference Center.

9.1 Management Setting

Context

Floodplains and terraces are an integral part of the hydrologic and ecological system supporting water quality and habitat.

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 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 percent probability of a 100-year flood happening in that area (Table 9.1). Box Elder County has been digitally mapped by NFHL, most recently in April 2014.

Table 9.1. Acreage of Box Elder County in 100-year floodplain.

FLOOD ZONE	ACRES
100-year flood zone	262,567

Source: Federal Emergency Management Agency National Flood Hazard Layer.

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 §7-27a-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

Box Elder County desires to promote a healthy hydrological system that 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 through application of stream setbacks, FEMA flood zone requirements and careful review of development along streams and at the mouths of drainages on public lands.

Policies and Guidelines

The county's objective includes developing a localized floodplain standard, determining appropriate levels of development, and establishing appropriate setbacks from streams.[3,4]

9.3.2 Management Objective

Promote healthy hydrological system including aquatic habitat and riparian vegetation.

Policies and Guidelines

Management actions within floodplains and wetlands should include measures to preserve, protect, and (if necessary) restore their natural functions.[5]

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] Riparian Buffer Design Guidelines, USDA, General Technical Report RMRS-GTR-203, January 2008. https://www.fs.fed.us/rm/pubs/rmrs_gtr203.pdf (accessed March 16, 2017).

[4] Box Elder County. 1998. Box Elder County General Plan, Land Use Element, Flood Plains, p.7.

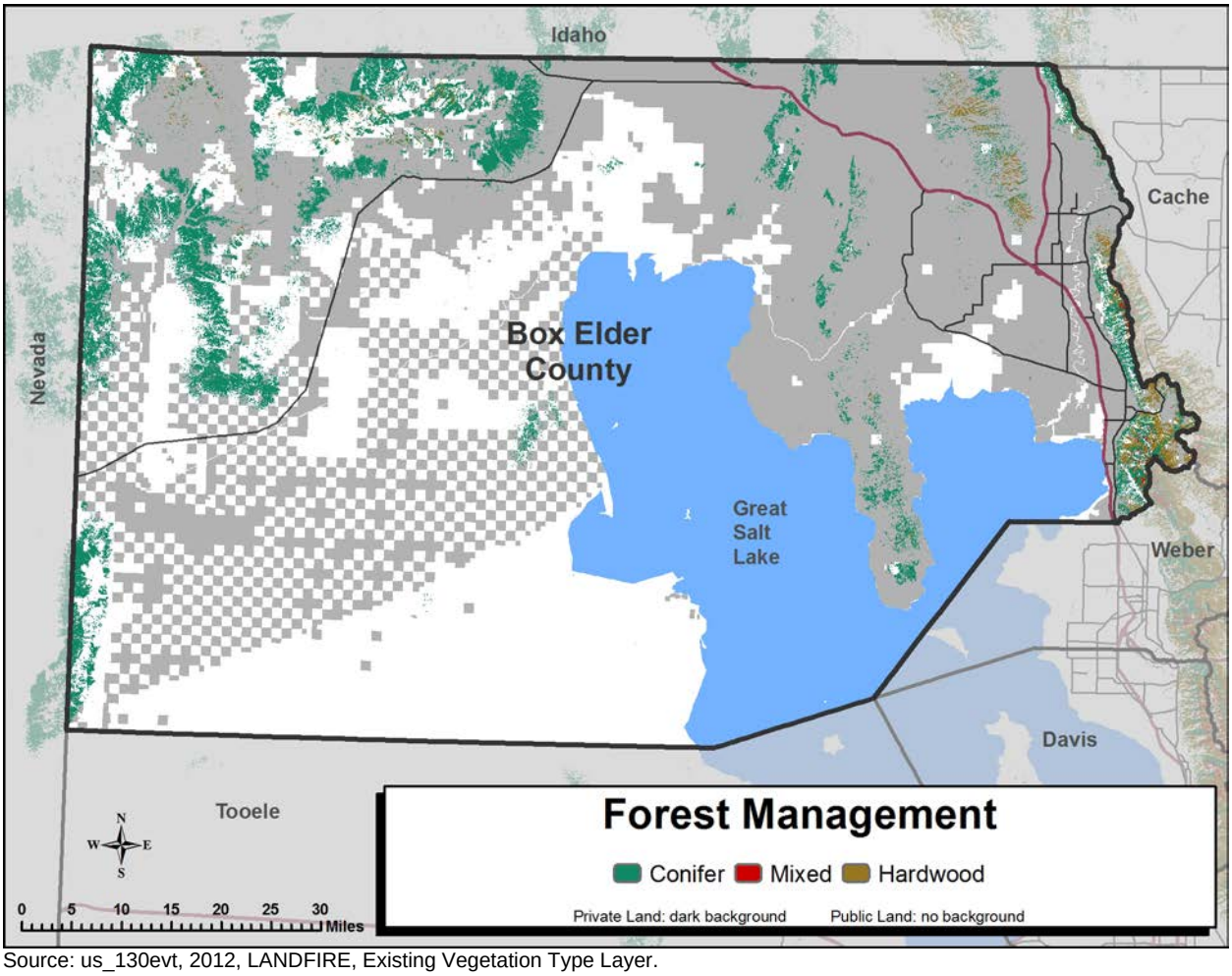
[5] US Bureau of Land Management, Salt Lake District. 1990. Proposed Pony Express Resource Management Plan and Final Environmental Impact Statement. http://www.blm.gov/style/medialib/blm/ut/natural_resources/planning/existing_lups6.Par.40049.File.dat/PONYFEIS.PDF (accessed April 2017).

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.

Related resources:

- Fire Management
- Noxious Weeds



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

10.1 Management Setting

Context

The Forest Service manages two large areas in Box Elder County, the Wellsville Mountains east of Brigham City, which are part of the Uinta-Wasatch-Cache National Forest, and the River Raft Mountains in western Box Elder County which area a part of the Sawtooth National Forest.

Good forest management benefits recreation, aesthetics, water quality, forest products, and wildlife habitat. Changing temperature and precipitation levels in the West will alter the forest and its vegetative composition.

Findings

Box Elder County is home to more than 916,000 acres of forests and shrublands, not including those found on private lands. Table 10.1 shows forested types by landowner.

Table 10.1. Acres of vegetation types in Box Elder County by landowner.

FORESTED VEGETATION TYPE	US FOREST SERVICE (ACRES)	US BUREAU OF LAND MGMT (ACRES)	US DEPT OF DEFENSE (ACRES)	STATE OF UTAH (ACRES)
Conifer	36,599	75,597	4	15,486
Conifer-Hardwood	1,566	6	-	169
Hardwood	8,129	723	-	1,496
Shrubland	48,068	573,242	48,160	107,236
Totals	94,362	649,568	48,164	124,387

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

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

Box Elder County desires to continue to maintain and improve forest health for the benefit of water quality, livestock grazing, wildlife habitat, recreation, and the forest's resilience to change while providing for multiple uses.

10.3 Management Objectives and Associated Policies and Guidelines

10.3.1 Management Objective

Promote forest health.

Policies and Guidelines

Coordinate with land managing agencies to maintain and promote forest health and the associated impacts on watershed health.

10.3.2 Management Objective

Manage pinyon-juniper encroachment of grasslands in western Box Elder County.

Policies and Guidelines

- Continue ongoing public and private pinyon-juniper treatments.[1]

- As part of pinyon-juniper management, allow public cutting of cordwood and Christmas trees.

10.4 References

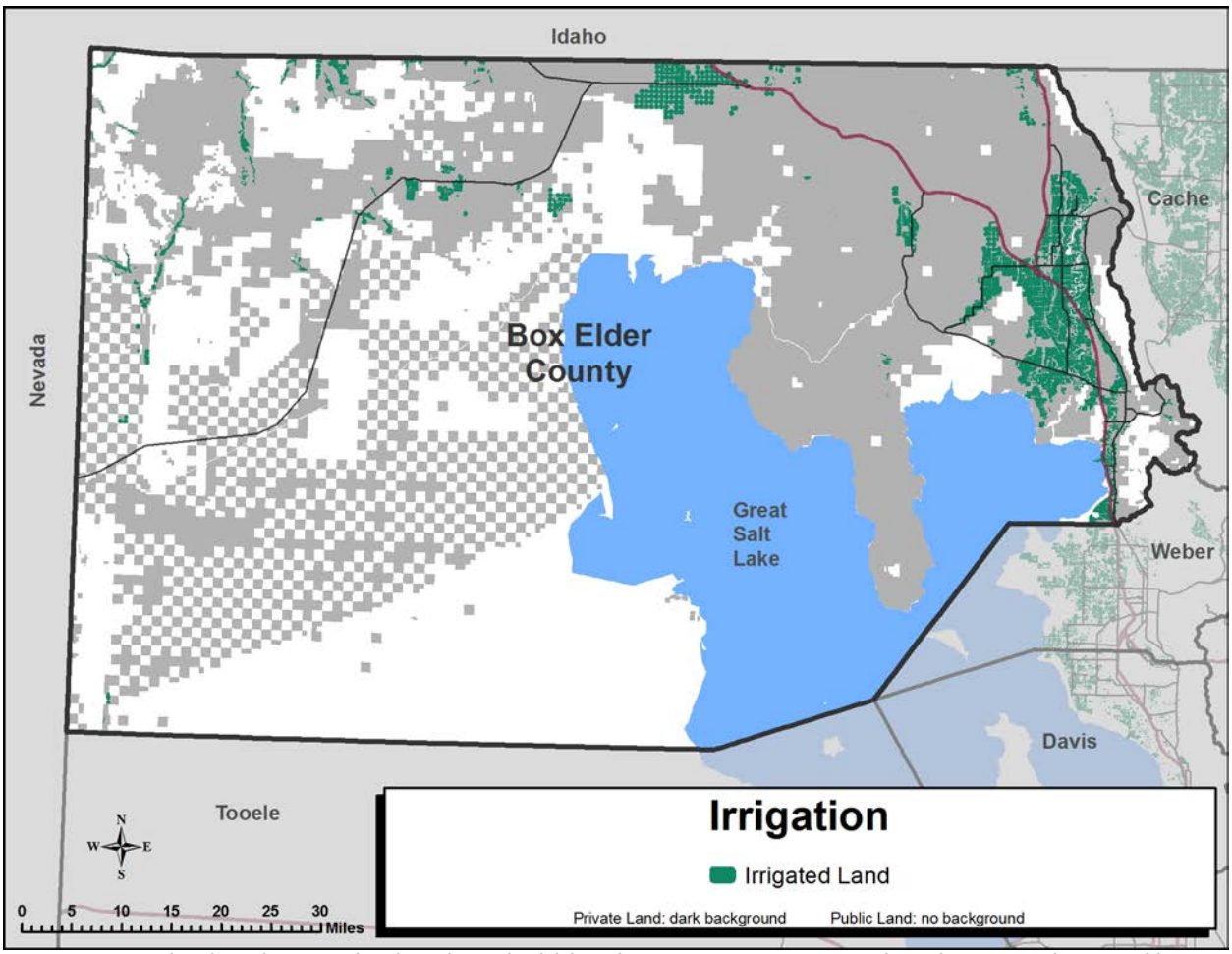
[1] Cirrus Ecological Solutions, LC. & Logan Simpson Design, Inc. 2013. West Box Elder Coordinated Resource Management Plan. http://utahcbcp.org/files/uploads/boxelder/WBECRMPlanJan2013.pdf, (accessed April, 14, 2017).

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 Box Elder 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

Context

Box Elder County's public lands serve as the watershed supplying irrigation systems in the county. Irrigation water is delivered to irrigation users through a system of dams, diversions, canals, and pipelines. Irrigation provides benefit to wildlife, groundwater recharge, and wetland and riparian areas.

Findings

Based on analysis of the Water Related Land Use spatial data published by the Division of Water Resources, Box Elder County has 126,394 acres of irrigated lands.[1] The vast majority is located on private lands.

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

Box Elder County desires to protect its watersheds and water quality for the benefit of irrigation and other 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 practices for the benefit of water quality and water supply.

Policies and Guidelines

Coordinate with land managing agencies to promote best practices for water quality and water supply.

11.3.2 Management Objective

Protect natural areas while also utilizing water for agriculture.

Policies and Guidelines

Seek policies and coordination that strike a balance between protecting natural areas while also utilizing water for agriculture.

11.4 References

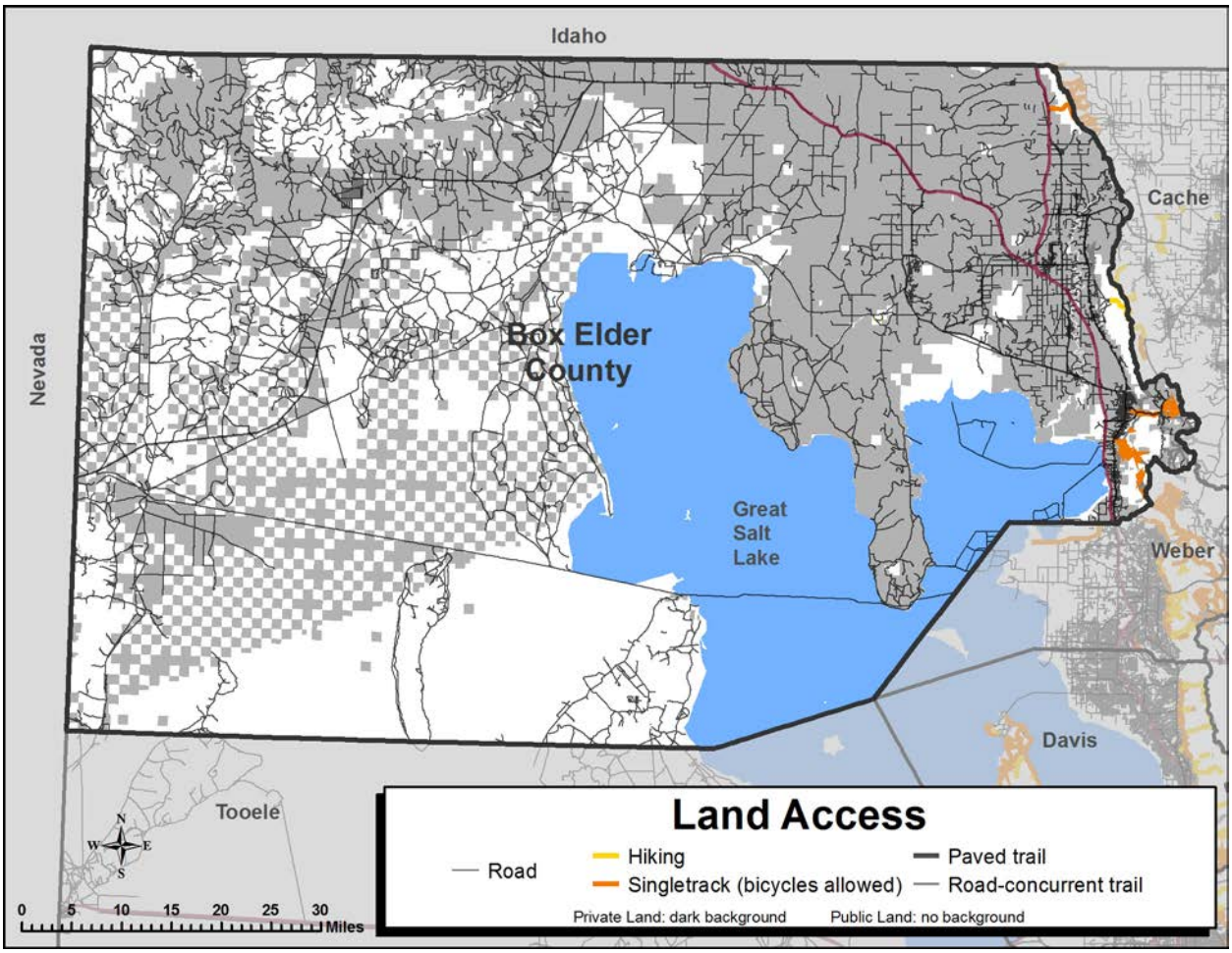
[1] Utah Division of Water Resources. 2016. Water Related Land Use, spatial data. Downloaded April 2017.

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, Utah State and Institutional Trust Lands (SITLA) lands within federal lands, 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

Context

Land ownership in Box Elder County is complex and varied, and at times it is hard to distinguish public and private property lines. Trespassing, whether deliberate or accidental, causes conflict between the public and private property owners. Box Elder County residents and visitors benefit from clear and consistent public land access policies. The county has historically had access to many public lands using roads and trails. The county has an interest in protecting public access to public lands through private property. The county has pending litigation with the federal government related to land access Revised Statute 2477 (RS2477) on federal lands.

Findings

Box Elder 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.

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. Box Elder County has an obligation to ensure the ROWs with historic access across private lands remain open. Additionally, as urban development continues, Box Elder County should facilitate new public access to public lands by purchasing easements across private property.

Box Elder 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

Box Elder County desires to maintain and improve access to public lands, SITLA, and State Sovereign land across public lands where appropriate and provide for a variety of transportation and recreation modes, including motorized, mechanical, and non-motorized to support multiple uses.

12.3 Management Objectives and Associated Policies and Guidelines

12.3.1 Management Objective

Maintain and improve access to public lands and where appropriate provide for a variety of transportation and recreation modes.

Policies and Guidelines

- All roads and trails in the county that historically have been open to motorized use should remain open.[2]

- To minimize resource damage, land access should be restricted to existing and designated routes only.[2]

- Keep roads open, reasonably maintained, and in good repair. New roads may need to facilitate reasonable access to resource opportunities, including livestock operations, energy resources, minerals, recreational opportunities, search and rescue, access for people with disabilities, and to access SITLA properties.[3]

- Promote management of access to Utah's public, trust, and sovereign lands to protect and enhance Utah's wildlife and other natural resources, consistent with prudent use of those resources. Coordinate the public, trust, and sovereign land access management plans with private owners plans, and promote the effective use and access to and through public, trust, and sovereign lands.[3]

- Use PILT funds for county sheriff enforcement of travel restrictions on public lands to prevent travel off designated routes. Funding should also be used to replace and maintain route signage.

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).

[2] Box Elder County. 1998. Box Elder County General Plan, County Goals, Objectives, and Action Steps, (Updated 2011). Resolution No. 11-03.

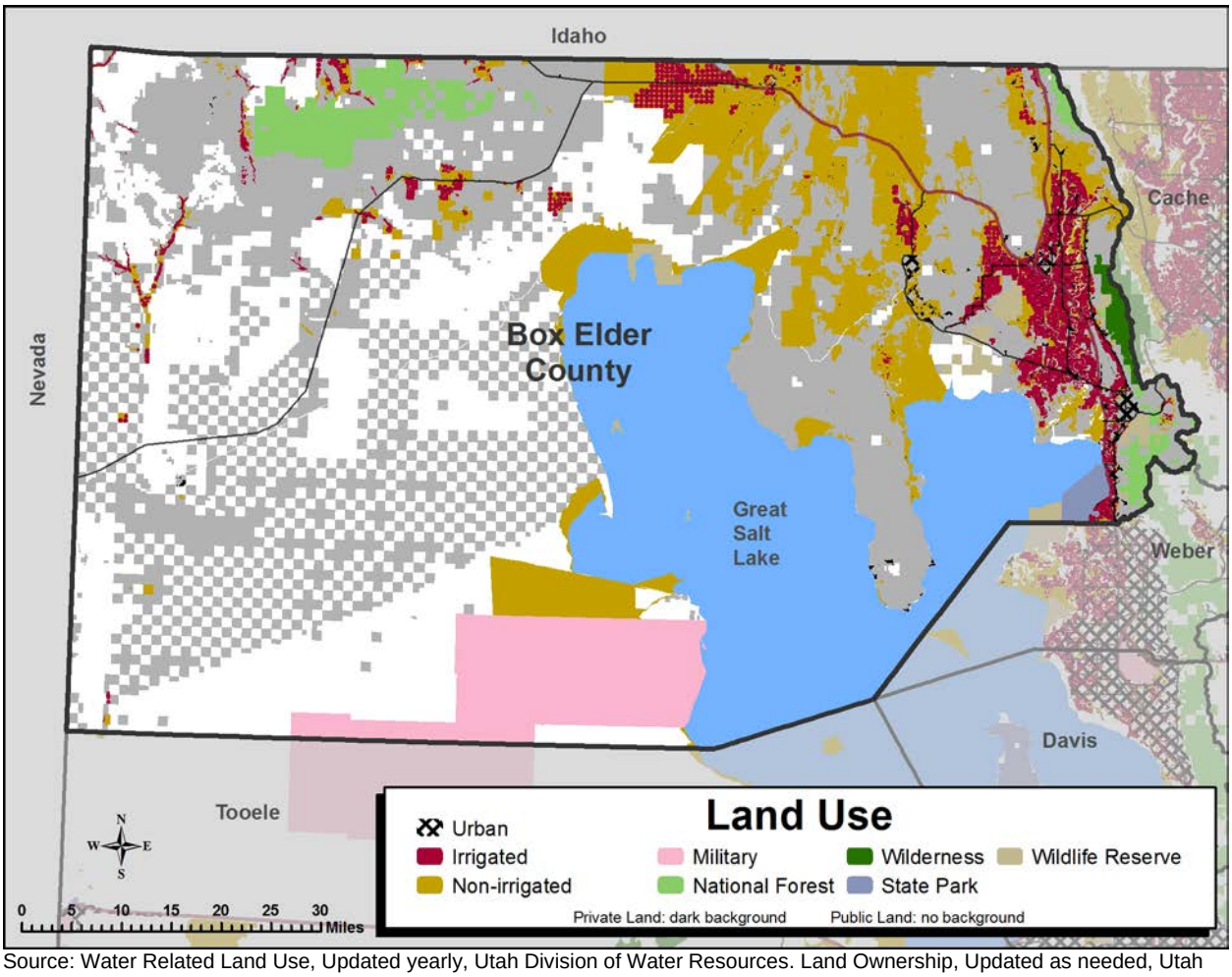
[3] Box Elder County. 1998. Box Elder County General Plan, Public Land Access, pp. 154

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 for lands owned by the US Department of Defense (DOD), US Fish and Wildlife Service (USFWS), or managed by the Utah School and Institutional Trust Lands (SITLA).

Related resources:

- Mining
- Land Access
- Livestock and Grazing
- Wetlands
- Wilderness



Source: Water Related Land Use, Updated yearly, Utah Division of Water Resources. Land Ownership, Updated as needed, Utah School and Institutional Trust Lands. Access via Utah Automated Geographic Reference Center.

13.1 Management Setting

Context

Public lands in Box Elder County serve as critical drinking water sources, important wildlife habitat, pasture for livestock, and highly utilized recreational areas to name a few. Several County-based industries including agriculture, grazing, mining, tourism and recreation depend on public lands and the accompanying resources for continued economic growth and stability. Decisions made regarding the prioritization of land uses are made by those with administrative responsibility to manage the lands. Land use designations on public lands range from low-impact (such as hiking) to high-impact (such as mineral extraction and other industrial uses). In west Box Elder County, the predominant human land use is livestock grazing.

Box Elder County asserts planning authority over all lands and natural resources within its geographical boundaries even though the federal government and the State of Utah own a substantial portion of those lands and resources.

Findings

In terms of area, Box Elder County is the fourth largest county in Utah at 4,306,694 acres. Ownership of these lands is a complex pattern comprised of Federal, State, and private lands. A complete breakdown of land ownership is provided in Table 13.1.

Table 13.1. Land ownership and acreage within Box Elder County.

OWNERSHIP CATEGORY	LAND OWNERSHIP TYPE OR ENTITY	ACRES	PERCENTAGE	
Federal	US Bureau of Land Management	1,078,177	25.0	34
Federal	US Department of Defense	203,799	4.7	
Federal	US Forest Service	103,850	2.4	
Federal	US Fish and Wildlife Service	74,092	1.7	
Federal	US National Parks Service	2,215	0.1	
State	Utah Forestry, Fire, and State Lands	727,821	16.9	22
State	Utah State and Institutional Trust Lands	177,312	4.1	
State	Utah Division of Wildlife Resources	31,035	0.7	
State	Utah State Parks	12,147	0.3	
Private	Private	1,896,059	44.0	44
Private	Native American Tribal	187	> 0.1	
Totals		4,306,694	100.0	100

Source: Spatial analysis of the SITLA Land Ownership GIS Layer

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 RMP 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 which 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 RMPs, also known as Forest Plans, under the National Forest Management Act (16 USC §1600 et seq. [1976]), also known as NFMA. Subsection 1604(a) requires the 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 and the 2003 Revised Sawtooth National Forest Land and Resource Management Plan.[1,2]

US Bureau of Land Management (BLM)

The Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]), also known as FLPMA, mandates the US Bureau of Land Management (BLM) to manage lands under multiple-use philosophy. A component of FLPMA is the requirement for an open and public land use planning process, also known as resource management planning, to determine the optimal use of public lands for recreation, conservation, and commercial activities. The BLM is also subject to planning procedures specified in NEPA (42 USC §4321 et seq. [1969]).

Current applicable BLM planning documents include the Pony Express Resource Management Plan (1990) and the Box Elder Resource Management Plan (1986). [3,4]

State Sovereign Lands

The Utah Department of Natural Resources manages state sovereign lands of the Great Salt Lake through the Utah Division of Forestry, Fire, and State Lands (FFSL). Under the Public Trust Doctrine, the State of Utah has fee title ownership of the bed of the Great Salt Lake (lands below the meander line) as sovereign land.[5] The state's management jurisdiction is assigned to the Department of Natural Resources FFSL (Utah Administrative Code R652-70-100). The previously cited comprehensive management plan for the Great Salt Lake provides management direction to achieve reasonable and beneficial uses of the lake's resources under multiple-use, sustained-yield principles (Utah Code §65A-2-1). The supplemental Mineral Leasing Plan provides specific guidance related to existing and potential future mineral leasing activities on the lake. The waters and wetlands of the Great Salt Lake are jurisdictional under the federal

Clean Water Act (Federal Water Pollution Control Act) (33 USC §1251 et seq. [1972]) (also see Section 27, Wetlands).

Current applicable FFSL planning documents include the 2013 Final Great Salt Lake Comprehensive Management Plan and Record of Decision [6] and the 2013 Final Great Salt Lake Mineral Leasing Plan and Record of Decision.[7]

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

Box Elder County desires to protect rural, agricultural, grazing, mineral, wildlife, and industrial land uses on both private and public lands. The county desires to take an active role in public land management, planning and decision-making processes of public lands in the county. The county supports multiple-use and sustained yield management of public lands and encourages a responsible balance between consumptive and nonconsumptive use.

Box Elder County desires that federal land management agencies (specifically, the Forest Service and BLM), cooperate, to the fullest extent, possible with county goals and objectives for resource management as spelled out in the NEPA, FLPMA, and NFMA. 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 and land management 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 active and open communication among various federal, state, tribal, and local land use authorities to improve coordination of land use decision and activities.[8]

Policies and Guidelines

- Participate in federal and state resource planning activities during the scoping/issue identification and draft plan review/comment period.

- Notify interested county residents of current or proposed activities and solicit their input when formulating county comments/responses.

- Prevent additional restrictive land use designations such as Wilderness or Wild and Scenic Rivers.

- County will actively participate in wildlife management decisions and issues.

- County will actively participate in rangeland management activities.

13.3.2 Management Objective

Support the policy of multiple-use and sustained yield land management practices. Strike a responsible balance between resource development with resource protection and environmental stewardship.[8]

Policies and Guidelines

- When resource conflicts arise under multiple use land management, managers should prioritize traditional and historic land uses.

- Encourage resource development on public lands and encourages a responsible balance between consumptive and nonconsumptive use.

13.3.3 Management Objective

Consolidate public lands within the county; federal acquisition of private lands is contrary to policies and plans of the county.

Policies and Guidelines

- Proactively participate in federal and state resource planning activities during the scoping/issue identification and draft plan review/comment period.

- Valuation of land trades should include both value and acreage to avoid large amounts of low-value lands being traded for a small amount of high-value lands.

- Gather and prepare valid data identifying impacts to the county if transfers are made (e.g., loss of tax base).

- Review federal and state private land acquisition and/or public lands disposal proposals in respect to county interests. This includes considering affected grazing permittees and related interests.

- Identify and prioritize public lands or resources for future exchange or disposal.

13.3.4 Management Objective

Support open space preservation to maintain the rural atmosphere on the county.

Policies and Guidelines

The county identifies these areas as open space priorities: river and stream corridors, critical wildlife habitat corridors, historic and cultural areas, prime agricultural areas, prominent hillsides and ridgelines, wetlands, and watershed areas.[8]

13.3.5 Management Objective

A portion of the royalty collected by the state should be returned to the county to cover industry-related impacts.[8]

Policies and Guidelines

Increase the percentage of brine shrimp royalty collected by the state and returned to Box Elder County.

13.3.6 Management Objective

Many tourist destinations, recreational facilities, and resources are found on public lands, and visitors to these areas directly impact the county by utilizing county-provided infrastructure, law enforcement, emergency-medical, and waste-disposal services.

Policies and Guidelines

When evaluating potential recreational objectives and alternatives, the county will consider the following issues: the county's ability to provide essential services (law enforcement, emergency services, water and waste management, search and rescue); impacts on traditional resource uses; facility development and maintenance partnerships with agencies, concessionaires, and special interest groups; and anticipated economic returns and allocation of revenues received.[8]

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).

[2] US Forest Service. 2003. Sawtooth National Forest Land and Resource Management Plan, Amended 2012. https://www.fs.usda.gov/detail/sawtooth/landmanagement/planning/?cid=stelprdb5391896 (accessed April 14, 2017).

[3] 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 March 23, 2017)

[4] US Bureau of Land Management, Salt Lake District. 1986. Box Elder Resource Management Plan.

[5] Slade, D. C. 1990. Putting the Public Trust Doctrine to Work: The Application of the Public Trust Doctrine to the Management of Lands, Waters, and Living Resources of the Coastal States. Hartford, CT: Connecticut Dept. of Environmental Protection, Coastal Resources Management Division.

[6] Utah Department of Natural Resources, Forestry, Fire & State Lands. 2013. Final Comprehensive Management Plan and Record of Decision.

[7] Utah Department of Natural Resources, Forestry, Fire & State Lands. 2013. Final Great Salt Lake Mineral Leasing Plan and Record of Decision.

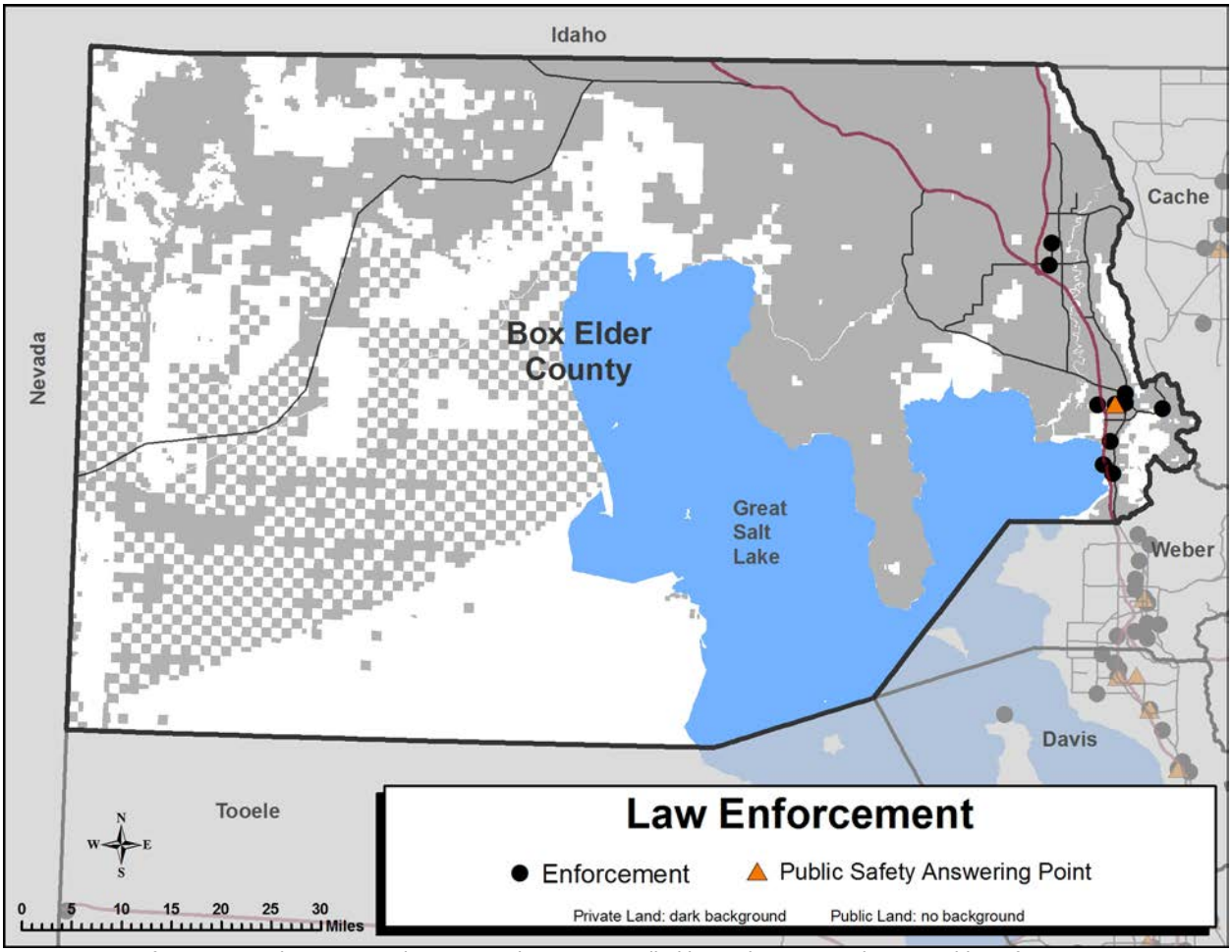
[8] Box Elder County. 1998. Box Elder County General Plan, County Goals, Objectives, and Action Steps, (Updated 2011). Resolution No. 11-03.

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

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 (OHVs), and in search-and-rescue operations.

Findings

Coordination occurs among several jurisdictions with some form of law enforcement on public lands in Box Elder County. This includes the US Bureau of Land Management (BLM), US Forest Service (USFS), Utah Department of Wildlife Resources (DWR) Resource Conservation Officers, Utah Forestry Fire and State Lands (FFSL), Utah State Park Rangers, Utah Highway Patrol, County Sheriff, and local law enforcement.

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

Box Elder County desires for law enforcement to continue to play a critical role in the rules and regulation enforcement and search and rescue operations on public lands. Box Elder County desires to continue and increase law enforcement partnerships across agencies.

14.3 Management Objectives and Associated Policies and Guidelines

14.3.1 Management Objective

Local law enforcement continues to play a critical role in enforcement of rules and regulations and search and rescue operations on public lands.

Policies and Guidelines

- Notify the county sheriff's office immediately when there is a life-threatening situation, criminal act, project structure failure, resource contamination, natural phenomenon (landslides and fire), cultural resource site(s) disturbance, and/or discovery of human remains.

- Designate areas where discharge of firearms, bow and arrow, or air and gas weapons is not appropriate.

- Increase law enforcement presence in key areas, improve effectiveness of public information on restrictions, and increase participation of individuals and organized groups in monitoring uses.[1]

- Ensure that appropriate fire management regulations and procedures are in place and enforced [in appropriate areas].

- Recognize the importance of search-and-rescue access.[2]

- Provide emergency communication and coordinate with local law enforcement.

14.3.2 Management Objective

Law enforcement plays a critical role in enforcement of travel management for (OHVs).

Policies and Guidelines

- Support coordination among the BLM, Forest Service, State Parks, FFSL to identify areas where OHV trespassing is a problem and develop methods to prohibit illegal access.

- Coordinate with industry groups and landowners on the authorized locations of OHV use on private land around the Great Salt Lake and western Box Elder County.

- Coordinate with intersecting agencies to develop educational material and enforcement strategies that would discourage OHV users from trespassing.

14.3.3 Management Objective

Encourage and support law enforcement partnerships across agencies and jurisdictions.

Policies and Guidelines

- Share/coordinate interagency law enforcement (civil, wildlife resources, and recreation public use regulations) between the county, DWR, State Parks, FFSL, BLM and Forest Service.

- Provide emergency communication and coordinate with local law enforcement.

- Assess ways to financially support search-and-rescue operations in the county.

- Support search-and-rescue coordination between the sheriff's department and other law enforcement agencies in facilitating rescues.

14.4 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).

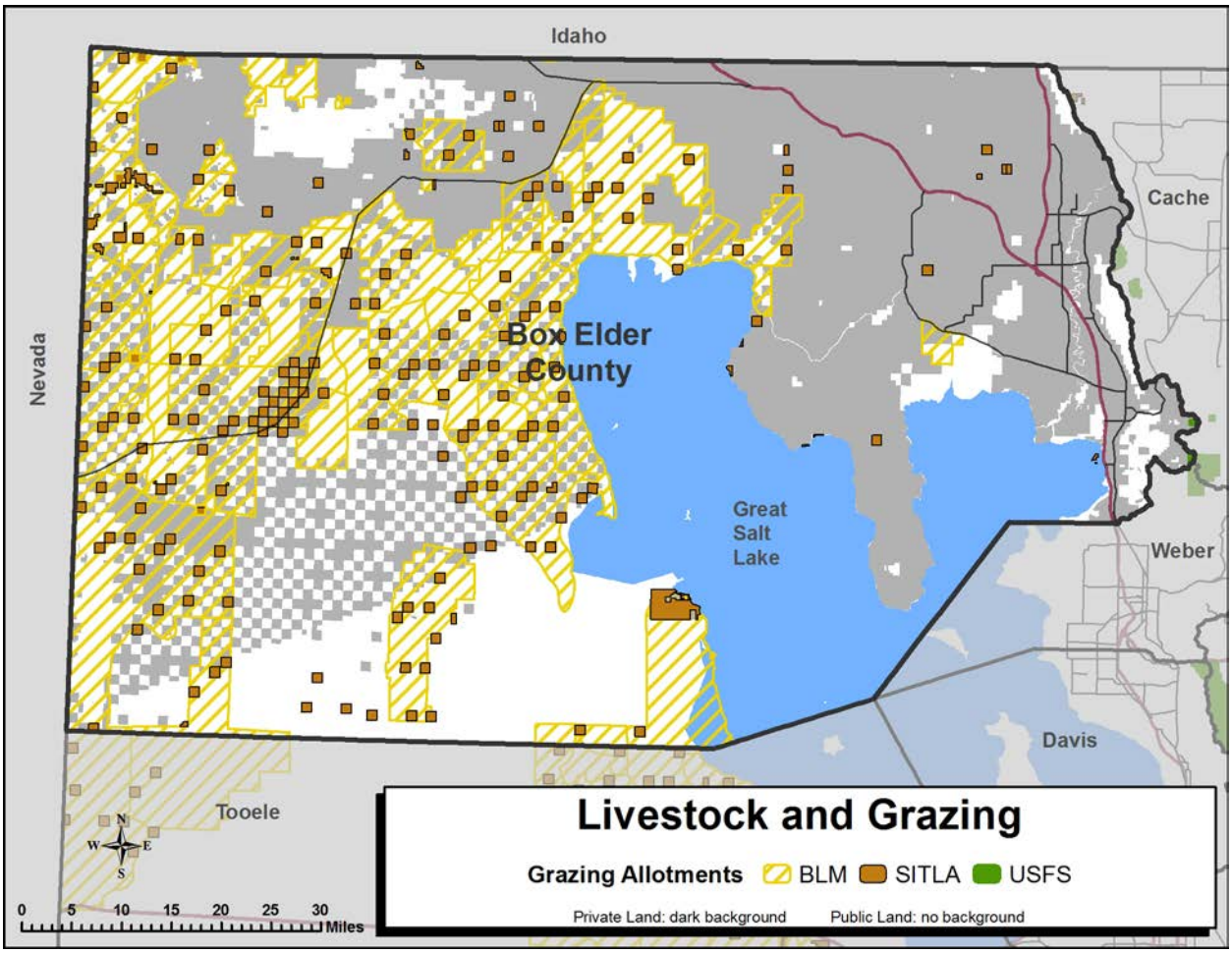
[2] Utah Department of Natural Resources, Forestry, Fire & State Lands. 2013. Final Comprehensive Management Plan and Record of Decision.

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 Utah 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

Context

Livestock production is a significant component of the economy of Box Elder County and is an important component of the culture and lifestyle of its residents. Livestock grazing occurs on both public and private lands across the county, with public lands providing a critical portion of grazing lands.

Findings

Grazing allotments cover a large portion of US Bureau of Land Management (BLM), US Forest Service (USFS), and Utah School and Institutional Trust Lands (SITLA) lands in Box Elder 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 Bureau of Land Management	72	1,322,478
US Forest Service	3	529
Utah School and Institutional Trust Lands Administration	227	134,299

Legal Context

The BLM manages grazing in Box Elder County based on guidance specified in the Resource Management Plans which are developed under the Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]) and National Environmental Policy Act (42 USC §4321 et seq. [1969]), also known as NEPA.

The Forest Service manages grazing in Box Elder 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 NEPA (42 USC §4321 et seq. [1969]).

15.2 Desired Future State

Box Elder County desires that public lands continue to provide livestock grazing. The county desires grazing to be used as a tool to improve resource and watershed health, forage productivity, wildlife habitat, and recreational opportunities while reducing invasive weed species and the risk of wildfire.

15.3 Management Objectives and Associated Policies and Guidelines

15.3.1 Management Objective

Continue access to grazing lands, grazing permits, and support maximum sustainable animal unit months.

Policies and Guidelines

- Support the policy of multiple-use and sustained yield land management practices. Responsible grazing is compatible with other land uses on public lands.

- Maintain active county and citizen participation in federal and state public land and resource planning processes.[1] The county will actively participate in rangeland management activities.

- Maintain working partnerships with public land/resource management agencies, including BLM, Forest Service, and SITLA.

15.3.2 Management Objective

Encourage range vegetation management to support maximum sustainable forage growth.[2]

Policies and Guidelines

- Establish a winter forage assessment by utilizing the county Resource Management Committee to investigate cost-effective methods to assess forage conditions and impediments to improving forage production (e.g., water availability, noxious weed infestations, sub-optimal vegetation, past grazing practices) on an area-wide basis on both private and public winter grazing lands. Contractor support, using the funding sources noted above, may be the most effective way to produce this assessment.

- Implement forage improvements. Based on the results of the forage assessment, seek funding for recommended improvements. Start with projects on private land to avoid extended timeframes associated with NEPA review and other agency procedures.[2]

- Encourage grazing of invasive plants, such as early season grazing of cheatgrass or other annual non-native invasive plants.[2]

- Increase management flexibility on public lands with regards to grazing. Work with the BLM, USFS, and individual grazing permittees to implement changes in permit terms and conditions necessary to allow efficient use and maintenance of new winter forage resources.[2]

- To provide data required for more flexible management, solicit agencies' help to train willing and committed livestock producers in monitoring range conditions on private and public lands to develop experience with permittee-assisted monitoring.[2]

15.4 References

[1] Box Elder County. 1998. Box Elder County General Plan, County Goals, Objectives, and Action Steps, (Updated 2011). Resolution No. 11-03.

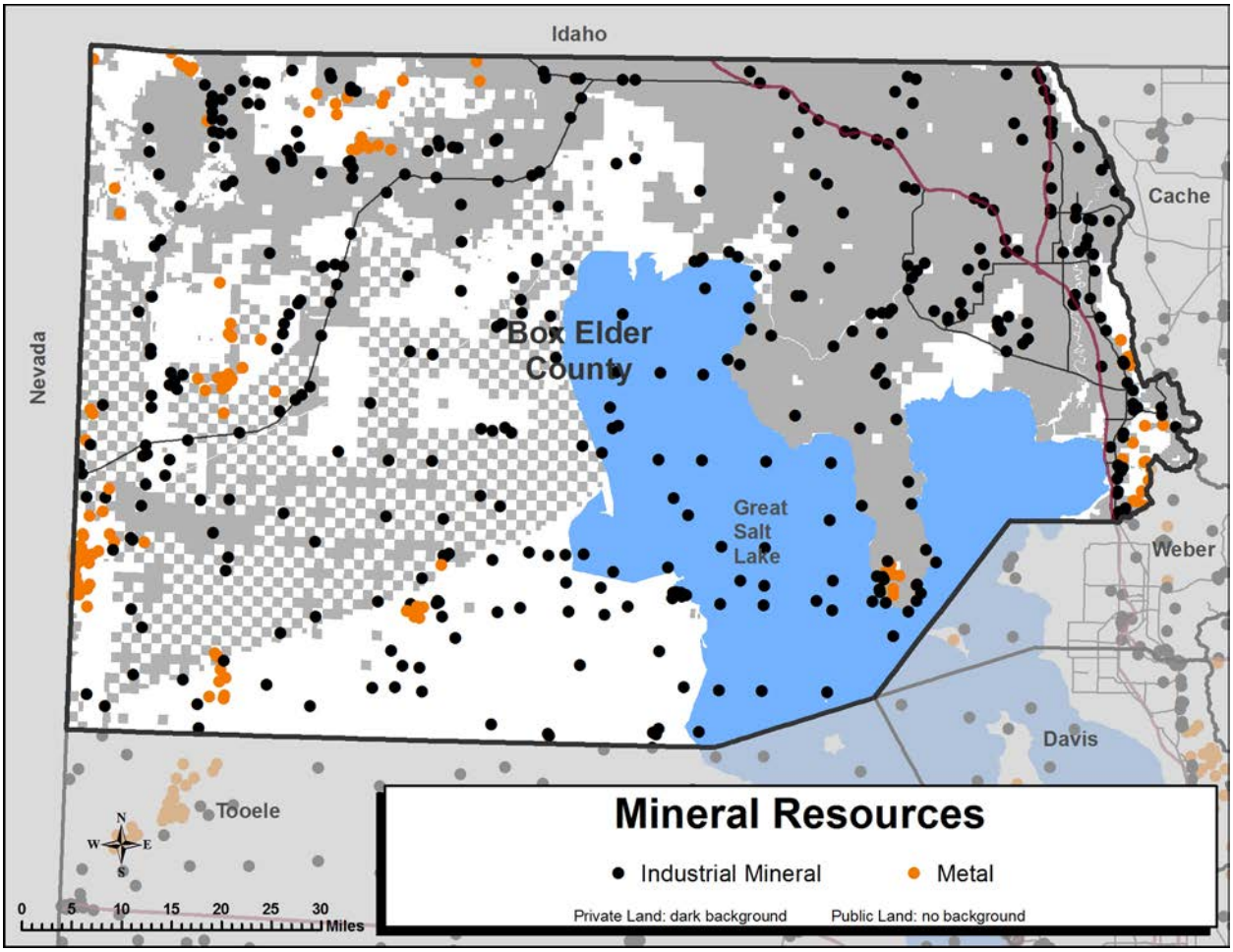
[2] Cirrus Ecological Solutions, LC. & Logan Simpson Design, Inc. 2013. West Box Elder Coordinated Resource Management Plan. http://utahcbcp.org/files/uploads/boxelder/WBECRMPlanJan2013.pdf, (accessed April, 14, 2017).

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

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 Box Elder 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.

Findings

Box Elder County has moderate mineral resources, most notable in the western part of the county, including unique building stone quarries and a variety of minerals that are extracted from Great Salt Lake brines.

Brine shrimp are found in the Great Salt Lake and the harvest of which is a multi-million dollar industry. A large portion of the fishing fleet used to harvest shrimp is based out of Promontory Point. Brine shrimp harvests are managed by the Utah Department of Wildlife Resources.

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

Box Elder County desires to achieve and maintain a continuing yield of valuable mineral resources from public lands at the highest level.

16.3 Management Objectives and Associated Policies and Guidelines

16.3.1 Management Objective

Support mineral exploration and permitting on public lands.

Policies and Guidelines

- Development of the county's resources is important to present and future residents. It is the county's position that these resources can be developed in responsible manner. Operation conditions should address potential conflicts with adjacent land uses and community values. Sites should be engineered and managed for environmental compatibility, aesthetics and reclamation.[1]

- Box Elder County recognizes that it is technically feasible to access mineral and energy resources while preserving or, as necessary, restoring non-mineral and non-energy resources.[2]

- Lands shown to have reasonable mineral potential should be open to oil and gas leasing with reasonable stipulations and conditions that will protect the lands against unreasonable and irreparable damage to other significant resource values. This should include reasonable and effective mitigation and reclamation measures, and bonding for such, where necessary.[2]

16.3.2 Management Objective

Achieve and maintain a continuing yield of mineral resources from public lands.

Policies and Guidelines

Coordinate with land management agencies to achieve and maintain a continuing yield of mineral

resources on public lands.

16.4 References

[1] Box Elder County. 1998. Box Elder County General Plan, Land Use Element, Mineral Extraction and Gravel Pits, Community Dev & Land Use p.4.

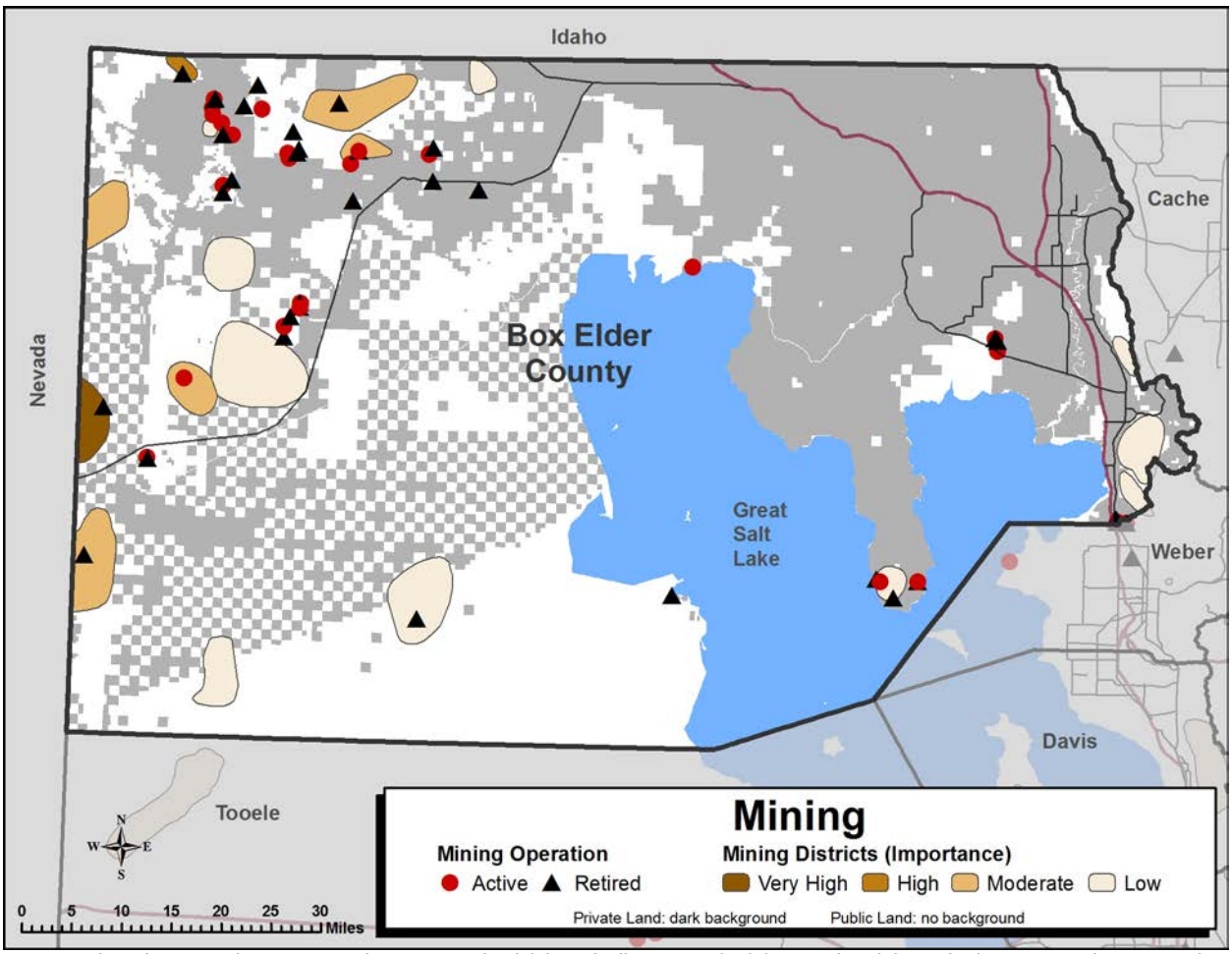
[2] Box Elder County. 1998. Box Elder County General Plan, Exhibit A, p. 6.

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, including brine shrimp. 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: MineralsDBMarch2015_SMOnly, 2015, Utah Division of Oil, Gas, and Mining. Utah_Mining_Districts, Date unknown, Utah Geological Survey.

17.1 Management Setting

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 of private lands are regulated by the county under zoning ordinance. 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.

The State of Utah categorizes brine shrimp harvest as an extractive industry similar to mining. Utah collects royalties from harvesters based on the quantity of shrimp cysts collected. Revenues generated are used to fund the Species Protection Account which is used by the Utah Department of Wildlife Resources (DWR) on wildlife projects throughout the state.

Box Elder County is supportive of existing mining, which provides economic benefits to the county.

Findings

Table 17.1 shows active and retired mines within Box Elder County, and their land ownership situation.

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

MINE TYPE	BOX ELDER COUNTY	FEDERAL	US FOREST SERVICE	US BUREAU OF LAND MANAGEMENT	STATE OF UTAH	PRIVATE
Active mineral	23	8	3	5	1	14
Retired mineral	35	14	3	11	2	19

Source: Utah Division of Oil, Gas, and Minerals; MineralsDBMarch2015_SMOnly

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 Box Elder County, the 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]), also referred to as NEPA. 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]), also referred to as FLPMA. 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.

Brine shrimp, like all wildlife, are regulated by the state DWR (Utah Code §23-14 et seq.). Royalty collections are enabled by the Utah Code §59-23 (Brine Shrimp Royalty Act) and designated for the Species Protection Account (Utah Code §73-3-303).

17.2 Desired Future State

Box Elder County supports existing and future mining operations and desires to be consulted in approval of new operations. The county 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. The county desires mining entities to have strong reclamation plans and oversight for mining activities, including road maintenance plans.

Box Elder County desires some portion of the royalties from brine shrimp harvest collected by the State be distributed to the county to cover industry-associated impacts.

17.3 Management Objectives and Associated Policies and Guidelines

17.3.1 Management Objective

Coordinate with land management agencies on proposed mining activities.

Policies and Guidelines

Local concerns and interests should be acknowledged and addressed by public land management agencies prior to decisions being made and plans implemented.[2]

17.3.2 Management Objective

Achieve and maintain a continuing yield of mineral resources on public lands at the highest levels.[3]

Policies and Guidelines

Coordinate with land management agencies to achieve and maintain a continuing yield of mineral resources on public lands at the highest levels.

17.3.3 Management Objective

Adjust state royalty payments from brine shrimp harvest to return a portion to Box Elder County to cover industry related impacts.

Policies and Guidelines

Work with county representatives to the state legislature to amend the Species Protection Account (Utah Code §73-3-303) to enable some portion of royalties be returned to Box Elder County to cover industry-related impacts.

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.

[2] Box Elder County. 1998. Box Elder County General Plan, Public Lands/Federal and State Agencies, Public Lands, Fed & State p.1.

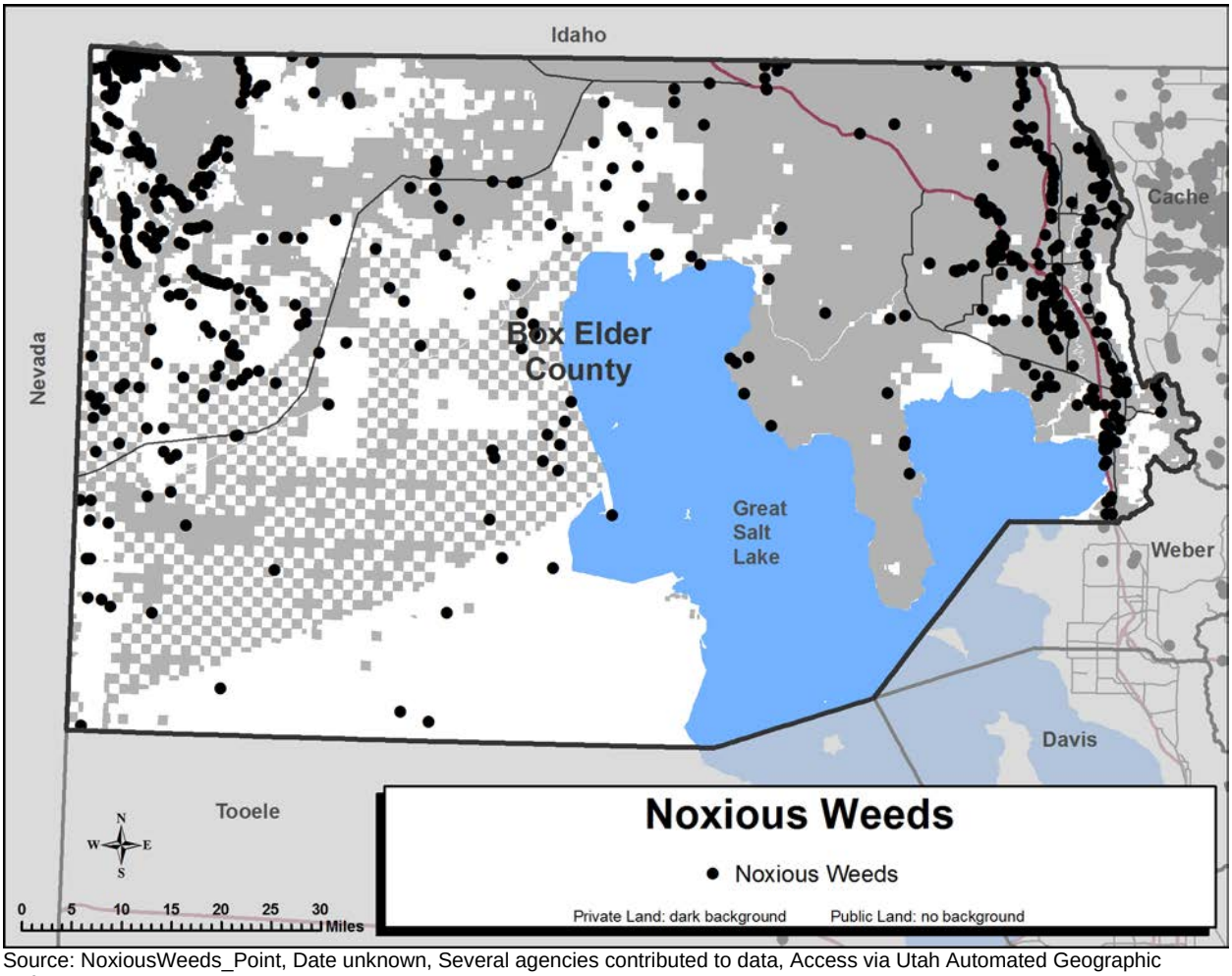
[3] Box Elder County. 1998. Box Elder County General Plan, County Goals, Objectives, and Action Steps, (Updated 2011). Resolution No. 11-03.

18. NOXIOUS WEEDS

Noxious and invasive weeds are plants considered harmful to livestock, agriculture, and wildlife, or that otherwise negatively impact the landscape by (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.

18.1 Management Setting

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. Box Elder County has an existing weed control program which works to control weeds throughout the county. The county is also part of two Cooperative Weed Control Areas (CWMA), Weber River and Goose Creek, which are cooperatives of local, state, and federal agencies that pool resources in efforts to treat weeds across the county.

Findings

Weed infestations are common across Box Elder 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.[1]

Local governments, public land managers, and private property owners are responsible for controlling weed species included the 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".[2] 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 population, 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*)
- Puncturevine (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*)

Box Elder County Noxious Weeds

State law allows additional weed species to be added to county noxious weed list if locally problematic. Prior to the States 2015 update, Box Elder County declared the following weed to be noxious in the county and has since been added to the official Utah list of noxious weeds.

- Rush skeletonweed (*Chondrilla juncea*)

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 Forest Service addressed weed management in its Forest Plan. They further clarified weed management in the 2006 Noxious Weed Treatment Program Environmental Impact Statement[3], in which the US 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.[4]

18.2 Desired Future State

Box Elder County desires aggressive efforts to control, prevent, and reduce noxious weed infestations (both county and state listed) on public lands. Control of noxious weeds is most successful when it is a collaborative effort of both public and private landowners and managers. Preventing small outbreaks of new weeds will continue to be the county’s highest priority. Addressing problems before a larger outbreaks occur will save the county significant time and financial resources.

18.3 Management Objectives and Associated Policies and Guidelines

18.3.1 Management Objective

Control, prevent, and reduce noxious weed infestations throughout the County.

Policies and Guidelines

- The county will continue to support efforts of the Box Elder County Weed Department to control noxious weeds throughout the county.[5]

- Encourage the use of grazing as a weed management tool through proper timing, intensity and duration to control weed infeatations.[6]

- Support Weber River and Goose Creek CWMA, as practical, through coordination, funding, and sharing staff and equipment.

- Establish new CWMA programs and new Weed Prevention Areas in Western Box Elder County to focus control efforts and attract funding.[7]

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

8.4 References

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

[2] 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.)

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

[4] 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)

[5] Box Elder County. 1998. Box Elder County General Plan, Vegetation, Community Dev & Land Use p. 9.

[6] Whiteside, R.E. 2004. The Utah Strategic Plan for Managing Noxious and Invasive Weeds, Utah Weed Advisory Council and the Utah Weed Control Association.

[7] 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).

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

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 Box Elder 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 Box Elder County.

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.

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] A similar Memorandum of Understanding was signed in 2009 between the US Burau of Land Management (BLM) and APHIS to conduct NEPA analysis and provide guidelines regarding the management and treatment of grasshoppers and Mormon crickets on lands under BLM stewardship.[2]

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 reimbursement to livestock owners for damage caused by bear, mountain lion, wolf, and eagle. 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 actively managed (controlled) and not be allowed to establish anywhere in the state.

19.2 Desired Future State

Box Elder County desires to maintain sustainable and mutually beneficial predator and prey populations. The county does not desire the introduction of predators not currently in the county.

19.3 Management Objectives and Associated Policies and Guidelines

19.3.1 Management Objective

Establish and 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.[3]
- Problematic bird and mammal species are kept in check where their success has the potential to become problematic to humans as well as sensitive wildlife.[4]
- Coordinate with APHIS WS program to conduct wildlife damage management to protect agricultural, industrial and natural resources, property and human health and safety from damage associated with wildlife.
- Maintain a healthy cougar population within their current distribution while considering human safety, economic concerns, other wildlife species, and maintaining hunting traditions through 2025.[5]
- Discourage the use of lead in control efforts because of its toxicity to humans and wildlife.
- 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] United States Department of Interior, Bureau of Land Management. 2009. Memorandum of

Understanding (MOU) Between Bureau of Land Management and the Animal and Plant Health Inspection Service Addressing the Management of Grasshoppers and Mormon Crickets BLM (#WO-220-2009-06). https://www.blm.gov/policy/im-2009-116 (accessed April 12, 2017).

[3] 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).

[4]. 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).

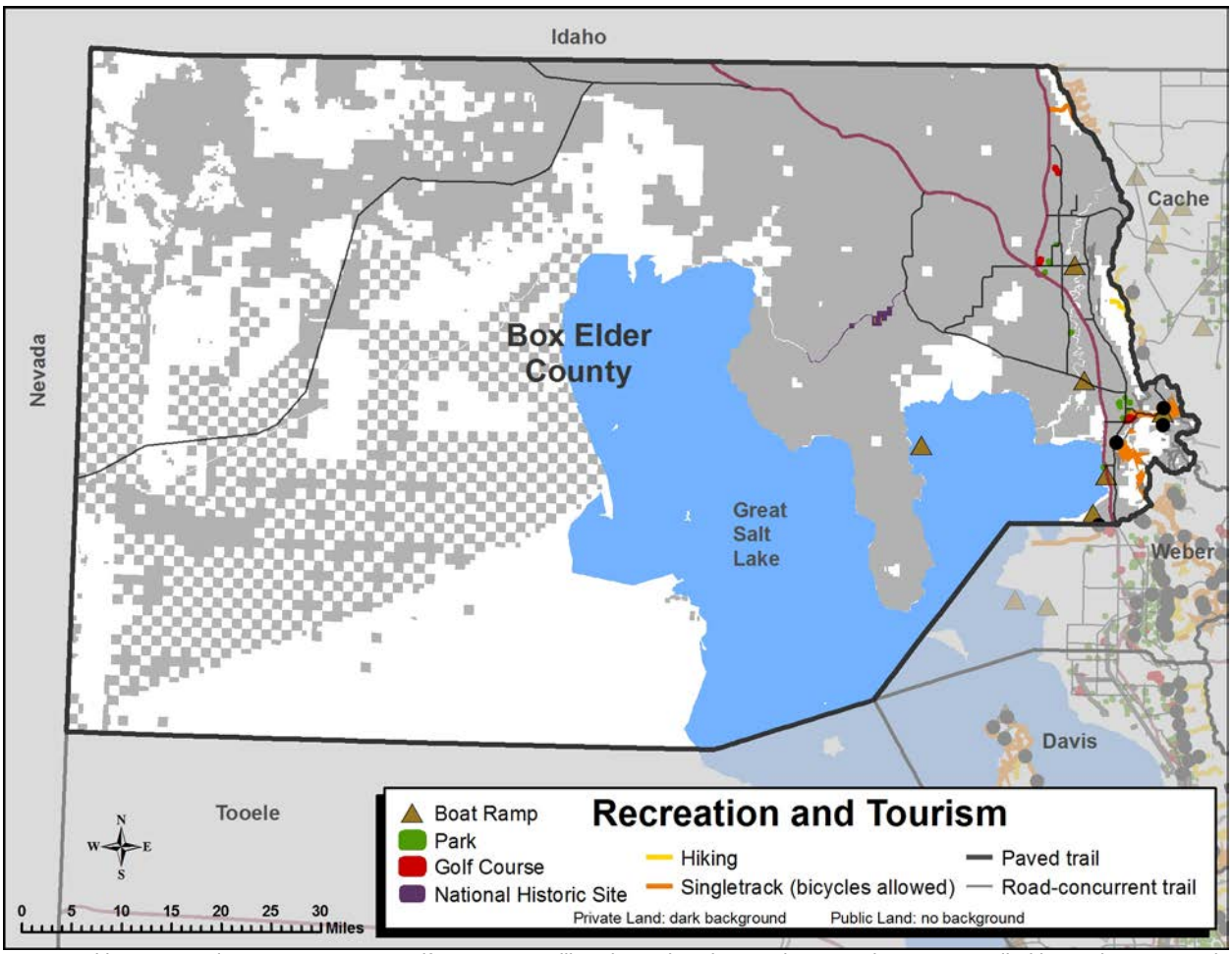
[5] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2015. Utah Cougar Management Plan V.3. https://wildlife.utah.gov/pdf/cmgtplan.pdf (accessed April 2017).

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, Trailheads, and Parks Local, Date unknown, Compiled by Utah Automated Geographic Reference Center. Trails, Date unknown, Utah Office of Tourism and GOED. Access via Utah Automated Geographic Reference Center.

20.1 Management Setting

Context

Box Elder County possesses a variety of unique natural, cultural, and historical resources. 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. Box Elder 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 Box Elder County to raise funds for local uses. Box Elder County's highway corridors provide connectivity between communities as well as access to public land for recreation and tourism.

Findings

Tourism and the related leisure and hospitality industry is beneficial to Box Elder County's economy by generating in nearly $900,000 in tax revenue in 2015 from the Transient Room Tax and Restaurant Tax. Leisure and hospitality jobs made up about 9.6 percent of all jobs in Box Elder County. [1] County attractions include Golden Spike National Historic Site, Bear River Migratory Bird Refuge, and Willard Bay.

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 percent 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 percent 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

Box Elder County desires to expand and support public land-based recreational opportunities to all individuals regardless of age and/or physical ability. The county desires to further promote tourism activities that highlight the history, landscape and culture of the region. Box Elder County also desires to maintain its highway corridors to provide connectivity between communities and to support public land access for recreation and tourism.

20.3 Management Objectives and Associated Policies and Guidelines

20.3.1 Management Objective

Expand and support public land-based recreational opportunities to all individuals regardless of age and/or physical ability.

Policies and Guidelines

When exploring future tourism development proposals, the county will consider the following [1]:

- Impacts to county natural, cultural and historical resources
- Demands on existing services and facilities (law enforcement, emergency services, water and waste management, search and rescue
- Tourism and recreation cost recovery strategies
- Impacts on the county's rural lifestyle
- Impacts on traditional recreational uses

20.3.2 Management Objective

Improve economic returns to the local tourism industry.[1]

Policies and Guidelines

In partnership with Box Elder County Economic Development Office, take the following measures:[1]

- Increase the number of private tourism-related industries within the county
- Hold entrepreneur training sessions for private tourism interests
- Contact bus tour and travel agents to explain and demonstrate 4-day itinerary options (lodging, food, sites, entertainment)
- Promote and develop local products for sale at local sites (partnership with the Box Elder Economic Development Council)

20.3.3 Management Objective

Expand/promote the existing public-private enterprise; promote community events and sites.[2]

Policies and Guidelines

Support the following events and attractions:[2]

- Privatize operation of the Centennial Tour Train
- Expand operation of Centennial Tour Train to include local events
- Design community-based guided tours
- Fund weekend re-enactment at Golden Spike National Historic Site
- Publicize community-level festivals and activities
- Continue printing and distributing of marketing materials (table-top calendar and "Trails, Rails and Rockets" brochure) and Internet use
- Expand advertising on Brigham City and Corinne Depots

- Encourage and support community efforts to preserve historical sites and structures
- Support the development of community and regional recreational trail systems
- Continue County support of the Golden Spike National Historic Site planning activities.[2]

20.3.4 Management Objective

Better inform County residents concerning local attractions; encourage local-to- visitor tourism promotion.[2]

Policies and Guidelines

- Continue visitor-targeted promotions and selective activities (placemats for restaurants, brochures in motel/hotels, etc.)
- Create special interest articles aimed to inform residents about local attractions and services.
- Formalize Pioneer Communities through workshops.
- Implement super-host training for local services industries.

20.3.5 Management Objective

Maintain highway corridors to provide connectivity between communities and to support public land access for recreation and tourism.

Policies and Guidelines

Maintain highway corridors to provide connectivity between communities and to support public land access for recreation and tourism.

20.3.6 Management Objective

Improve Bear River Migratory Bird Refuge facilities and roads.[2]

Policies and Guidelines

Mobilize "Friends of the Refuge" committee in fund raising efforts.[2]

20.4 References

[1] Ken C. Gardner Policy Institute, University of Utah. 2017. The State of Utah Travel and Tourism Industry. https://travel.utah.gov/wp-content/uploads/2017-Travel-Tourism-Brochure-FINAL-2.13.17.pdf (accessed March 26, 2017).

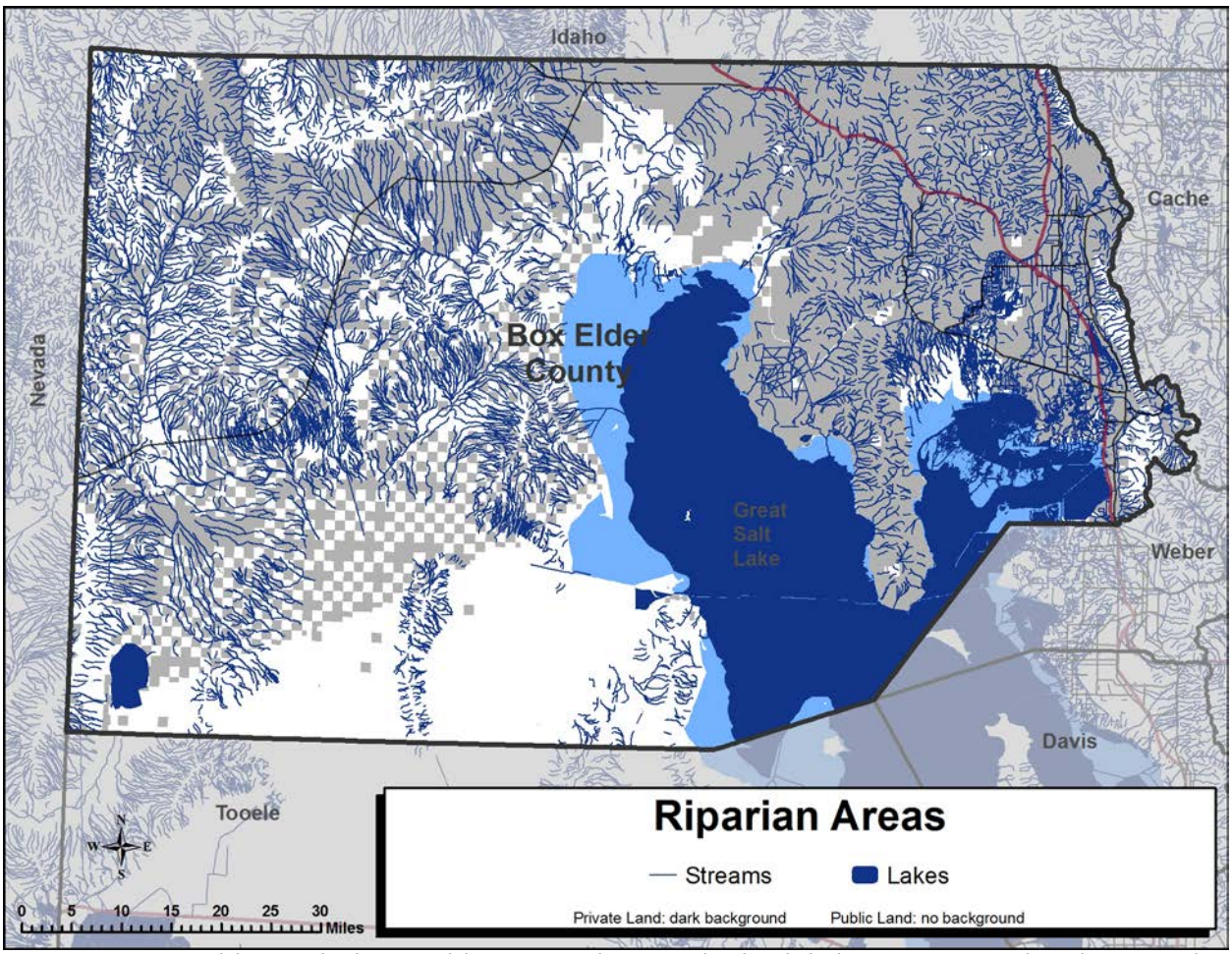
[2] Box Elder County. 1998. Box Elder County General Plan, Tourism p. 1-3.

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

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 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 on private lands in Box Elder County.

Findings

Riparian vegetation is mapped by the US Geological Service using remote sensing. Table 21.1 shows riparian acreage in Box Elder County by land ownership.

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

RIPARIAN TYPE	BOX ELDER COUNTY (ACRES)	US BUREAU OF LAND MGMT (ACRES)	US FOREST SERVICE (ACRES)	STATE OF UTAH (ACRES)
Western Riparian Woodland and Shrubland	6,136	956	1,076	324

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

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

Box Elder County desires to protect and restore functioning and connected riparian areas while increasing resiliency and adaptation to change.

21.3 Management Objectives and Associated Policies and Guidelines

21.3.1 Management Objective

Maintain and restore riparian areas.

Policies and Guidelines

- Support projects and management efforts that protect or restore riparian ecosystems, increasing the riparian area's resiliency and ability to be used for multiple purposes. The US Forest Service [2] and US Bureau of Land Management [3] have similar policies.

- Support education efforts about best management practices in riparian areas including managed grazing [4] and weed control [5] in riparian areas.

21.3.2 Management Objective

Increase riparian resilience by managing riparian areas for multiple uses that don't degrade the resource.

Policies and Guidelines

Manage riparian areas for multiple uses that don't degrade the resource.[3]

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

[3] 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 March 23, 2017)

[4] 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.

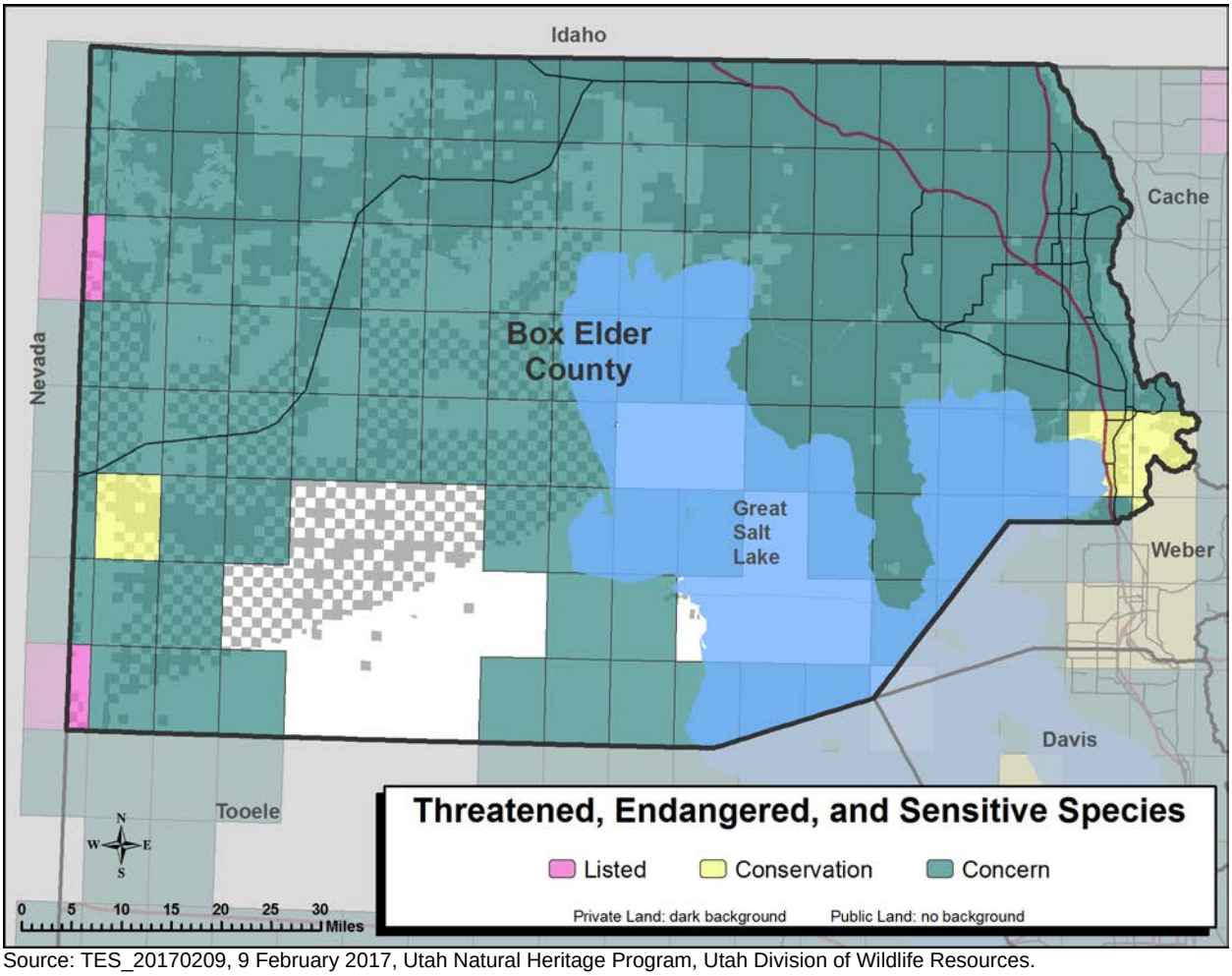
[5] Sheley et.al. 1995. Managing Riparian Weeds. Rangelands 17(2). https://journals.uair.arizona.edu/index.php/rangelands/article/viewFile/11260/10533.

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

Context

Critically imperiled plant and animal species are federally listed according to the Endangered Species Act (ESA). Under the ESA the US Fish & Wildlife Service (USFWS) 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 Department 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.

Findings

Box Elder County has two federally listed species under the ESA[3]:

- Gray wolf (*Canis lupis*).
- Lahontan Cutthroat Trout (*Oncorhynchus clarkii henshawi*)

Box Elder County has five wildlife species federally listed as candidates for ESA that also have conservation agreements with the DWR[2]:

- Bluehead Sucker (*Catostomus discobolus*)
- Bonneville Cutthroat Trout (*Oncorhynchus clarkii utah*)
- Least Chub (*Iotichthys phlegethontis*)
- Northern Goshawk (*Accipiter gentilis*)

Box Elder County has 25 wildlife species, including the four listed above, for which the DWR has identified as wildlife species of concern. The species are [2,4]:

- American white pelican (*Pelecanus erythrorhynchos)*
- Bald eagle (*Haliaeetus leucocephalus*)
- Bobolink (*Dolichonyx oryzivorus*)
- Burrowing owl (*Athene cunicularia*)
- California floater (*Anodonta californiensis*)
- Deseret mountain snail (*Oreohelix peripherica*)
- Ferruginous hawk (*Buteo regalis*)
- Grasshopper sparrow (*Ammodramus savannarum*)
- Great Plains toad (*Bufo cognatus*)

- Greater sage-grouse (*Centrocercus urophasianus*)
- Kit fox (*Vulpes macrotis*)
- Lewis's woodpecker (*Melanerpes lewis*)
- Long-billed curlew (*Numenius americanus*)
- Lyrate mountain snail (*Oreohelix haydeni*)
- Mountain plover (*Charadrius montanus*)
- Northern leatherside chub (*Lepidomeda copei*)
- Northwest Bonneville pyrg (*Pyrgulopsis variegata*)
- Preble's shrew (*Sorex preblei*)
- pygmy rabbit (*Brachylagus idahoensis*)
- sharp-tailed grouse (*Tympanuchus phasianellus*)
- short-eared owl (*Asio flammeus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Utah physa (*Physella utahensis*)
- Western pearlshell (*Margaritifera falcata*)
- Western toad (*Bufo boreas*)
- Yellowstone cutthroat trout (*Oncorhynchus clarkii bouvieri*)

Box Elder County has one candidate plant species:[3]

- Goose Creek milkvetch (*Astragalus anserinus*).

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 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

Box Elder County desires to maintain viability of wildlife and plant species-at-risk (including endangered, threatened and sensitive species and unique communities) and their habitats by actions that directly help to maintain viability through coordination with the county.

22.3 Management Objectives and Associated Policies and Guidelines

22.3.1 Management Objective

Encourage responsible recreation and effective education and enforcement.

Policies and Guidelines

Responsible recreation is promoted and encouraged via effective education and enforcement.[1]

22.3.2 Management Objective

Provide connectivity between fragmented habitats that support at-risk wildlife and plant species.

Policies and Guidelines

Support connectivity between fragmented habitats that support at-risk wildlife and plant species.

22.3.3 Management Objective

Encourage the protection of open lands that support at-risk wildlife and plant species.

Policies and Guidelines

Open lands that are crucial to wildlife do not have the potential to be developed for housing and urban growth.

22.3.4 Management Objective

Restore degraded habitats where at-risk wildlife and plant species are found.

Policies and Guidelines

- Limit grazing in sensitive areas, including riparian areas and aquatic habitats.
- Restore or maintain hydrologic functions of water bodies and waterways.[1]
- 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]

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).

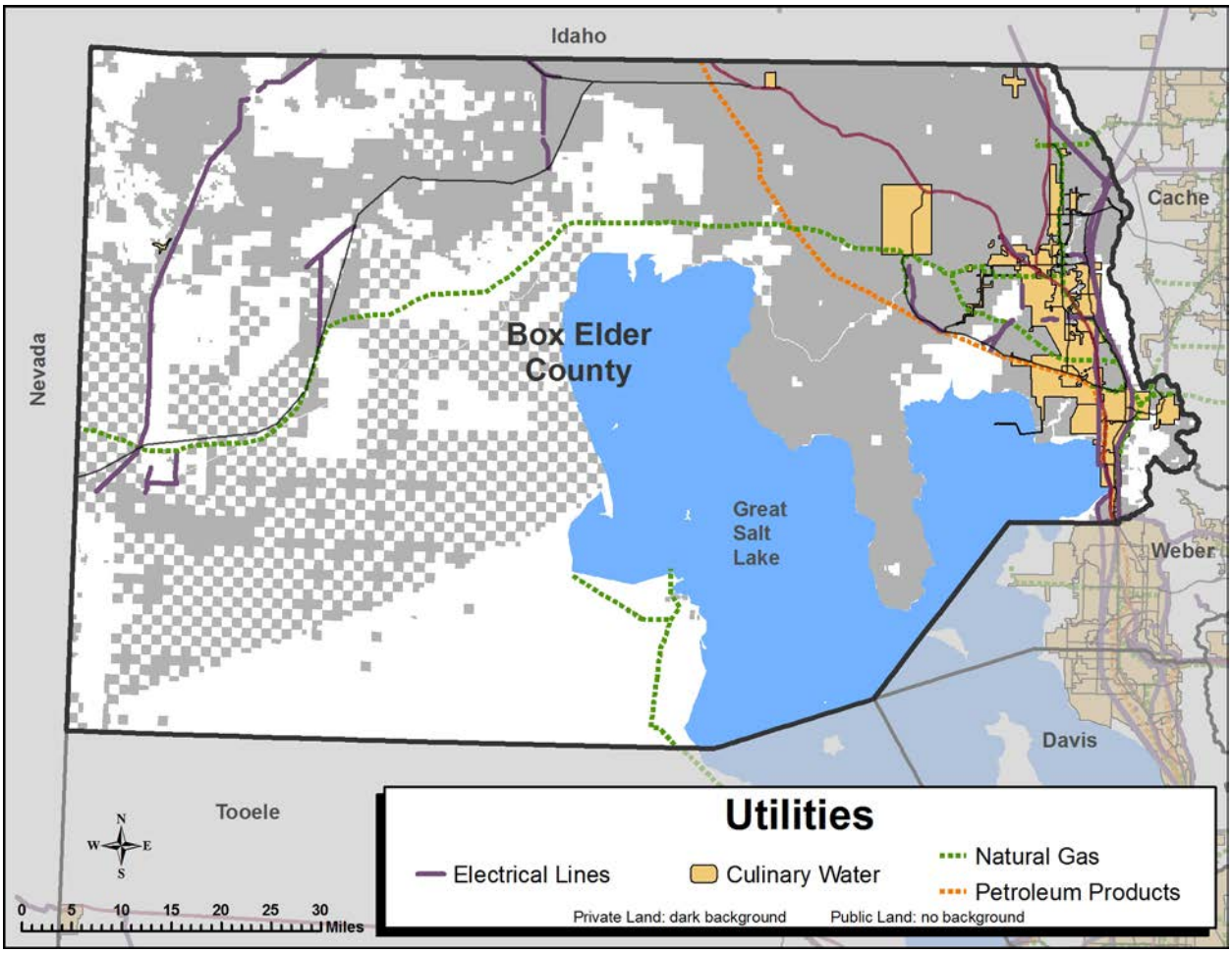
[5] Utah Department of Natural Resources, Utah Division of Wildlife Resources. 2014. Endangered Species Mitigation Fund. https://naturalresources.utah.gov/wp-content/uploads/ESMFguidelines2014forwebsite.pdf (accessed March 27, 2017).

23. UTILITIES

Utilities are useful services of commodities provided to the community at a cost. Examples of utilities include electricity, water, and communication services. Utility corridors often cross public lands impacting the land and its ecosystems.

Related resources:

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



Source: Electrical Lines, 1989, State of Utah Comprehensive Emergency Earthquake Preparedness Program. Pipelines, Date unknown, Utah Geological Survey. Retail Culinary Water Suppliers, December 2015, Several agencies. Access via Utah Automated Geographic Reference Center.

23.1 Management Setting

Context

Utilities, including reliable transportation of energy and communication services, are important to the people and businesses of Box Elder County. Utility corridors crossing public lands have the potential to adversely impact the natural resources, land uses, and visual quality.

Among the federal land management agencies and utility industry, the definition of a corridor varies. The Western Utility Group defines a corridor as: "A linear strip of land without definite width, but limited by technological, environmental and topographical factors, and containing one or more utility, communication or transportation facilities. A corridor is a land use designation, identified for the purpose of establishing policy direction as to the preferred location of compatible linear facilities and compatible and conflicting land uses. It does not imply entitlement of use. Appropriate environment review and regulatory permitting must precede occupancy on a project-specific basis."

Findings

Energy transmission via pipelines and powerlines occurs throughout Box Elder County, though precise counts, quantities, and locations are not available.

Legal Context

Utility corridors on public lands are generally managed during the land and resource planning stages. Forest Plans specifically address transportation and utility corridors.

Applicable Laws

Utility corridors are managed under land use planning procedures specified for the US Forest Service by the National Forest Management Act (16 USC §1600 et seq. [1976]) and for the US Bureau of Land Management by Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]). Both federal land management agencies are subject to the National Environmental Policy Act (42 USC §4321 et seq. [1969]) planning process.

23.2 Desired Future State

Box Elder County supports utility development on public lands while properly mitigating impacts to other resources through coordination with and approval by the county.

Box Elder County desires active and effective participation in the federal land planning process designating corridors that may pass through the county. Box Elder County desires to become involved in the process early and to maintain active participation, and supports cooperative partnership with federal agencies and the utility industry wherever possible.

23.3 Management Objectives and Associated Policies and Guidelines

23.3.1 Management Objective

Lessen resource impacts from utility to corridor development and place new facilities adjacent to existing facilities whenever possible.

Policies and Guidelines

- When possible, manufacturing uses will be located adjacent to population centers in order to discourage urban sprawl and reduce the costs of providing utilities and services.[1]

- Encourage regionalization of utilities.

- Coordinate regionally with agencies, private entities, and providers in planning and designing utility corridors.

23.4 References

[1] Box Elder County. 1998. Box Elder County General Plan, Manufacturing, Community Dev & Land Use p. 4.

24. VISUAL RESOURCES

Visual resources are the objects, scenes, vistas, etc., that humans 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

24.1 Management Setting

Context

Box Elder County has scenic resources to protect. The BLM uses a system called Visual Resource Management (VRM) as a method to evaluate and analyze visual resources. Box Elder County disagrees with management objectives for several VRM zones.

Rural areas of Box Elder County have little to no light pollution.

Findings

Public lands provide the stunning mountainous scenery on the eastern portion of the county as well as wide open vistas in the west. The skyline of snowy peaks, tree-covered hillsides, and canyons are primarily managed by the US Forest Service (Forest Service). The expansive landscape in the western portion of the county are managed by the US Bureau of Land Management (BLM). The Great Salt Lake is managed by Utah Forestry, Fire, and Sate Lands (FFSL).

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 while the BLM used VRM.[1, 2]

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]) and for the BLM by Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]). Both federal land management agencies are subject to the National Environmental Policy Act (42 USC §4321 et seq. [1969]) planning process.

Visual resources on the sovereign lands of Great Salt Lake and its shoreline as managed by FFSL under policies and objectives spelled out in the 2013. Final Great Salt Lake Comprehensive Management Plan and Record of Decision.[3]

24.2 Desired Future State

Box Elder County desires to manage light pollution in the rural portions of the county and desires to remove public lands from restrictive VRM zones (Class I and Class II) to facilitate multiple use management of public lands.

24.3 Management Objectives and Associated Policies and Guidelines

24.3.1 Management Objective

Reduce or mitigate light pollution in rural portions of Box Elder County.

Policies and Guidelines

Support efforts to reduce or mitigate limited light pollution in rural and undeveloped portions of Box Elder County through coordination with and approval of the county. This would include considering how additional lighting from a proposed project would impact Great Salt Lake resources and visitor experience.[1]

24.3.2 Management Objective

Remove public lands from restrictive VRM zones (Class I and Class II) to facilitate multiple use management of public lands.

Policies and Guidelines

- The objectives of BLM Class I and Class II VRM are not compatible with, and would therefore frustrate and interfere with, Box Elder County's plan for public lands.[2]

- There are certain limited exceptions where a Class II objective would be compatible with Box Elder County's plan for public lands. Such exceptions will be considered by Box Elder County on a case-by-case basis.[2]

- Box Elder County's plan for public lands is generally consistent with either Class III or Class IV, depending on the precise area.[2]

24.4 References

[1] Utah Department of Natural Resources, Forestry, Fire & State Lands. 2013. Final Comprehensive Management Plan and Record of Decision.

[2] Box Elder County. 1998. Box Elder County General Plan, Manufacturing, Community Dev & Land Use p. 4.

[3] Utah Division of Forestry, Fire, and State Lands. 2013. Final Great Salt Lake Comprehensive Management Plan and Record of Decision. Utah Department of Natural Resources.

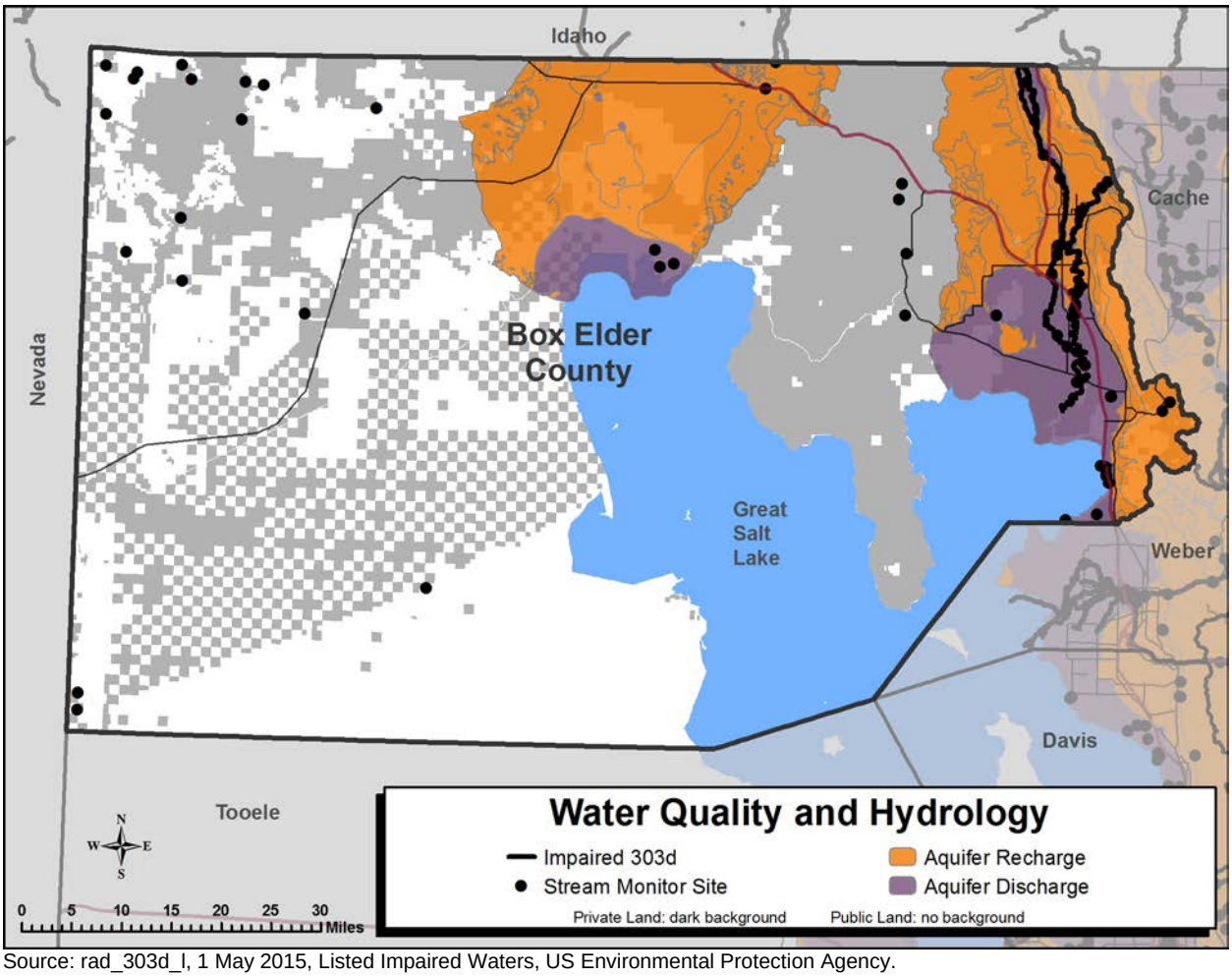
25. WATER QUALITY AND HYDROLOGY

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 use, 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.

25.1 Management Setting

Context

Box Elder County considers water to be one of its most important resources. Water is a renewable natural resource that is available in finite supply, with demand far exceeding supply. Managing water quality and hydrology across multiple jurisdictions and water right owners is complex and requires stakeholder coordination.

Water quality and hydrology on public lands impact private lands and the health of the various water resources downstream.

Part of the Great Salt Lake, with its unique saline water, is within the county.

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 (PS) 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 Box Elder County. Tables 24.1 and 24.2 provides information about the type and extent of streams and water bodies in Box Elder County.

Table 24.1. Total miles of linear water features in Box Elder County.

STREAM TYPE	MILES STREAM BY LOCATION							
	Box Elder County	State of Utah	Federal	US Forest Service	US Bureau of Land Mgmt	Dept of Defense	US Fish and Wildlife Service	National Park Service
Artificial Path	667	301	176	1	14	-	161	-
Canal/Ditch	493	24	20	-	4	1	15	-
Connector	136	9	36	-	34	1	0.5	0.5
Intermittent Stream/ River	981	36	379	115	264	-	-	-
Perennial Stream/River	807	100	210	79	73	-	58	-
Ephemeral Stream/River	7,207	448	2,807	104	2,499	127	72	5
Pipeline	154	2	26	1	23	1	-	-
Totals	10,445	920	3,654	300	2,911	130	306.5	5.5

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

Table 24.2. Total acres of water bodies in Box Elder County.

WATERBODY	ACREAGE WATER BODIES BY TYPE							
	Box Elder County	State of Utah	Federal	US Forest Service	US Bureau of Land Mgmt	Dept of Defense	US Fish and Wildlife Service	National Park Service
Lake/Pond	577,422	529,291	30,401	10	6,493	15	23,881	2
Reservoir	9,512	9,383	-	-	-	-	-	-
Swamp/Marsh	35,450	7,782	14,164	-	1,123	-	13,041	-
Playa	668	1	420	-	417	3	-	-
Totals	623.052	546,457	44,985	10	8,033	18	36,922	2

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

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 Utah Department of Environmental Quality (DEQ), Division of Water Quality (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 (NPDES). In Utah, the State was granted primacy by EPA to manage the NPDES permitting program as the Utah Pollution Discharge and Elimination System (UPDES) 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 DEQ 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 Total Maximum Daily Loads, which is a calculation of the maximum amount of a pollutant that a waterbody can have while still meeting water quality standards and 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 Salt Lake 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 26, Water Rights.

25.2 Desired Future State

Box Elder County desires to protect, maintain, and/or improve water quality and watersheds to provide stable and productive riparian and aquatic ecosystems on public lands and to protect the present and future water supply. The desires to review, study, and develop a water storage project in the western portion of the county.

25.3 Management Objectives and Associated Policies and Guidelines

25.3.1 Management Objective

Protect, maintain, and/or improve water quality and watersheds.

Policies and Guidelines

- Identify watershed areas not in properly functioning condition. Improve plant species composition, ground cover and age class diversity in these areas.

- Maintain and/or restore stream channel integrity, channel processes, and sediment regimes (timing, volume, character of sediment input/transport) under which riparian & aquatic ecosystems developed.

- Discourage unauthorized cross-country Off Highway Vehicle use in the county to reduce impacts to streams and riparian areas.

- Designated watershed protection areas should not be developed in order to preserve the hydrologic activity important for conserving the county's valuable water resources.

25.3.2 Management Objective

Review, study, and develop a water storage project in the western portion of the county.[4]

Policies and Guidelines

- Review report from the Utah Department Water Rights on potential reservoir sites in Western Box Elder County as soon as available.
- Complete reservoir feasibility study and submit to Board of Water Resources for approval.
- Complete reservoir design based on results of approved reservoir feasibility study.

25.4 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).

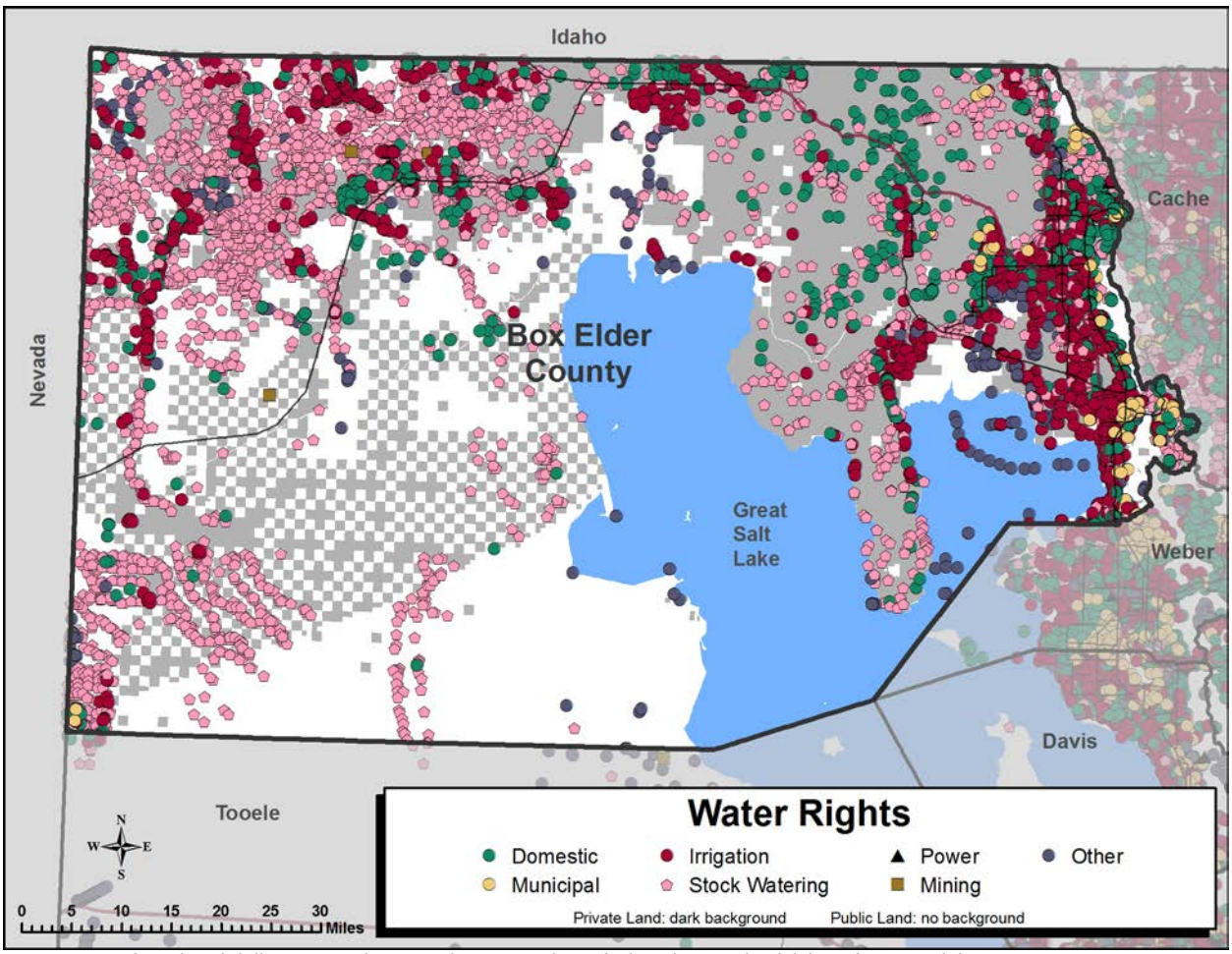
[4] Cirrus Ecological Solutions, LC. & Logan Simpson Design, Inc. 2013. West Box Elder Coordinated Resource Management Plan. http://utahcbcp.org/files/uploads/boxelder/WBECRMPlanJan2013.pdf, (accessed April, 14, 2017).

26. 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.

26.1 Management Setting

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. Box Elder County supports protection of existing water rights and reasonable development of additional water rights.

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 26.1 and 26.2 provide a summary of water right appropriations for public lands in Box Elder 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 26.1. All water points of diversion throughout Box Elder County, approved, perfected, terminated, and unapproved.

WATER POINT DIVERSION	BOX ELDER COUNTY (TOTAL)	STATE	FEDERAL	US FOREST SERVICE	US BUREAU OF LAND MGMT	US DEPT OF DEFENSE	US FISH AND WILDLIFE SERVICE	NATIONAL PARK SERVICE
Abandoned well	82	1	10	-	-	9	-	1
Drain	153	9	-	-	-	-	-	-
Point to point	3,931	169	1,124	293	812	-	19	-
Re-diversion	331	40	29	2	6	-	21	-
Return	27	5	-	-	-	-	-	-
Spring	155	18	24	20	4	-	-	-
Surface	2,290	139	180	56	98	6	20	-
Underground	3395	43	56	6	26	16	5	3
Totals	10,364	424	1,423	377	946	31	65	4

Source: Utah Division of Water Rights, wrpod.shp

Table 26.2. Municipal water suppliers in Box Elder County and their appropriation totals by land ownership type.

MUNICIPAL WATER SUPPLIERS	BOX ELDER COUNTY (ACRE-FEET)	FEDERAL (ACRE-FEET)	STATE (ACRE-FEET)	US FOREST SERVICE (ACRE-FEET)	US BUREAU OF LAND MGMT (ACRE-FEET)
ACME Water Company	1,246.5	-	66.3		
Bear River Water/Harper Ward	953.3	15.3	-	15.3	-
Beaver Dam Water Company	217.7	-	-	-	-
Bothwell Cemetery and Water Co.	2,927.1	-	-	-	-
Brigham City Municipal Water	8,901.5	644.5	442.4	520.2	-
Cedar Ridge Subdivision	75.3	-	-	-	-
Coleman Mobile Trailer Court	8.7	-	-	-	-
Corinne City Water System	2314	-	46.3	-	-
Deweyville Municipal Water System	2,472.4	-	39.6	-	-
Elwood Town	5,318.8	-	312.3	-	-
Five Cs Trailer Court	14.1	-	-	-	-
Garland City Corporation	1,505.9	-	-	-	-
Grouse Creek	388.8	3	-	-	3
Honeyville Municipal Water System	7,334.3	50.9	292.9	50.9	-
Hot Springs Trailer Court	7.3	-	-	-	-
Howell Culinary Water System	6,780.6	-	-	-	-
Mantua Culinary Water Systems	2,089.8	76.3	45.7	76.3	-
Marble Hills Subdivision	166.8	-	-	-	-
Perry City Water System	4,765.3	489.7	576.9	0.2	-
Pleasant View	9.3	-	-	-	-
Plymouth Town	339.6	-	-	-	-
Portage Municipal Water System	1,411.7	-	-	-	-
Riverside - North Garland Water	4,952.6	-	-	-	-
Snowville Waterworks	461.3	-	-	-	-
South Willard Culinary Water	1,010.9	0.4	2.2	0.4	-
Sunset Park Water Company	82.4	-	-	-	-
Thatcher-Penrose Service District	1,932.7	-	9.3	-	-
Tremonton Culinary Water	2,066.3	-	-	-	-
Ukon Water Company	1,635.6	-	13.1	-	-
West Corinne Water Company	37,008.1	1,144.6	604.2	-	29.4
Willard Municipal Water System	4,484.1	2.4	1,478.7	-	1.9
Willow Creek	58.1	-	-	-	-
Totals	10,2940.9	2,427.1	3,929.9	663.3	34.3

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. 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.

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 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 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 office 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.

26.2 Desired Future State

As a political subdivision of the State, Box Elder County has a legitimate interest in seeing that all reasonable steps are taken to preserve, maintain and, where reasonable, as determined by Box Elder County, develop those water resources. The county desires to support a watershed that maximizes water yield and water quality to meet present and future needs including water for livestock, wildlife, and human uses. The county also desires to protect private water rights.

26.3 Management Objectives and Associated Policies and Guidelines

26.3.1 Management Objective

Maintain existing water rights and support reasonable development of additional water rights.

Policies and Guidelines

- Provide for the protection of water rights and reasonable development of additional water rights.
- Coordinate with water resource management entities, especially water districts and canal companies, to ensure water supplies and water delivery infrastructure will meet growth needs.
- Encourage regionalization and cooperation between public and private entities.

26.3.2 Management Objective

Support a watershed that maximizes water yield and water quality to meet present and future needs including water for livestock, wildlife, and human uses.

Policies and Guidelines

- Take all reasonable steps to preserve, maintain and, where reasonable, as determined by Box Elder County, develop water resources.
- Implement watershed protections and vegetation management to maintain availability of water for beneficial uses and to protect water quality.

26.4 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).

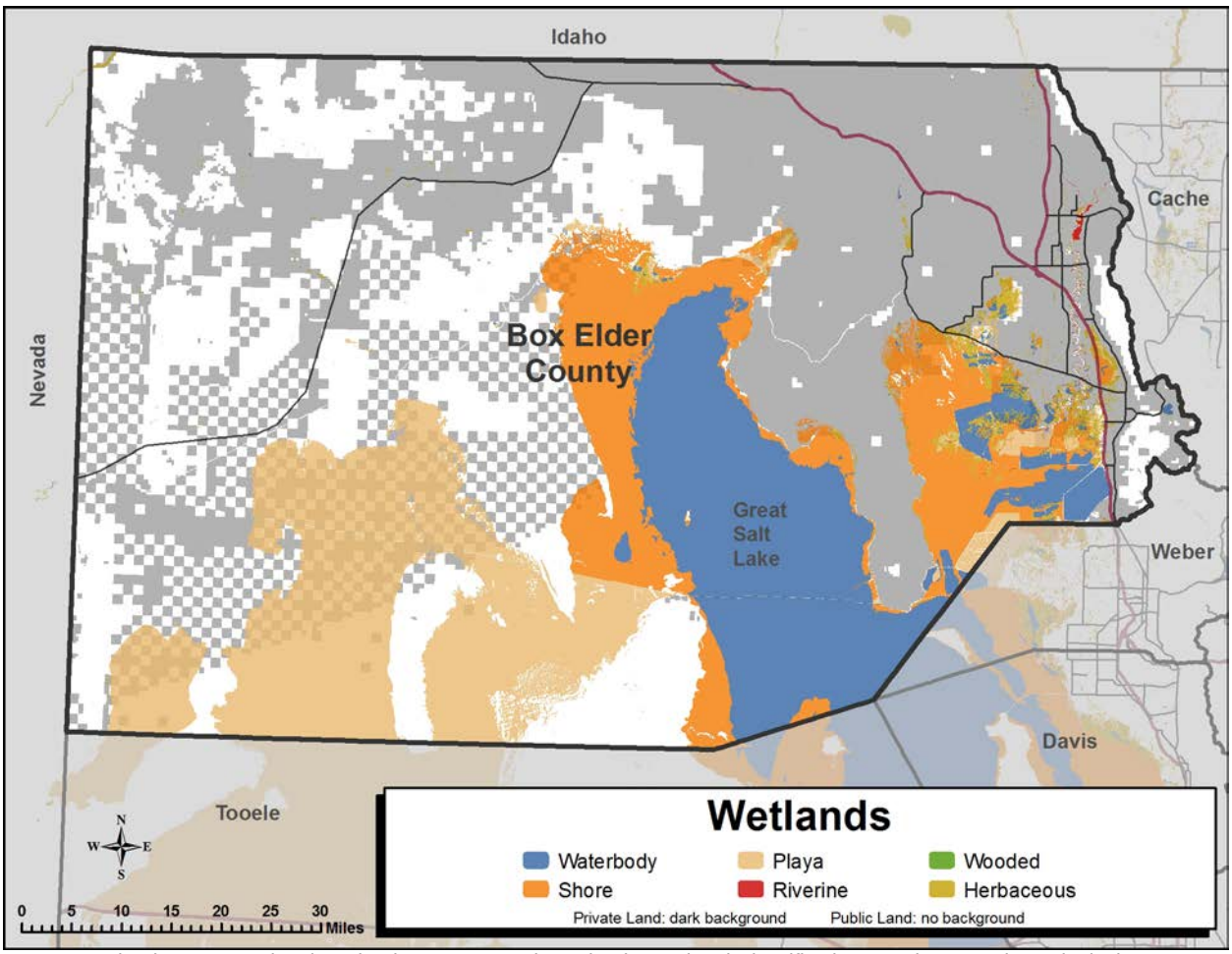
[2] Utah Department of Natural Resources. 2013. Study of Issues Related to State Jurisdiction Over Water Rights. http://www.waterrights.utah.gov/wrinfo/Brochures/state_jurisdiction_over_water_rights.pdf (accessed March 23, 2017).

27. 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.

27.1 Management Setting

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 Box Elder County's functioning hydrological system. The wetlands surrounding the Great Salt Lake support bird habitat of international importance. Responsible stewardship of these resources while supporting current industries will provide lasting benefit to Box Elder County's people and wildlife.

Findings

Wetlands are distributed across the entire County but are most prevalent at the Bear River Migratory Bird Refuge, salt flats in western Box Elder County as well as around the Great Salt Lake. Based on ACOE wetland delineations, a large quantity of playa, shoreline, and open water wetlands types occur in the county. Table 27.1 shows wetland acreage in Box Elder County by type and ownership status.

Table 27.1. Wetland acreage by type and ownership status within Box Elder County.

WETLAND TYPE	ACRES							
	Box Elder County	State of Utah	Federal	US Forest Service	US Bureau of Land Mgmt	US Dept of Defense	US Fish and Wildlife Service	National Park Service
Herbaceous	45,513	10,786	11,928	39	1,502	6	10,381	-
Playa	596,362	51,503	389,052	-	266,524	115,372	7,156	-
Riverine	3,106	808	683	2	-	-	676	5
Shore	373,283	275,968	62,842	-	21,294	1,277	40,271	-
Waterbody	480,701	454,202	18,281	10	417	9	17,844	1
Wooded	405	91	19	9	7	-	3	-
Totals	1,499,370	793,358	482,805	60	289,744	116,664	76,331	6

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.

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.

27.2 Desired Future State

Box Elder County desires to maintain and improve wetlands found on public lands for the benefit of its watershed, water quality, wildlife habitat, and other users.

Box Elder County disagrees with current guidelines for identifying wetlands and desires consultation in wetland identification.

27.3 Management Objectives and Associated Policies and Guidelines

27.3.1 Management Objective

Conserve and enhance wetland and riparian area functions and values.[2]

Policies and Guidelines

- Support develop a wetland mitigation program that identifies priority wetlands and establishing a General Permit as described in Section 404 of the Clean Water Act for development within wetland areas; requiring a Special Area Management Plan as a condition of development; and soliciting Utah Department of Wildlife Resources assistance in wetland/riparian habitat enhancement efforts.[3]

- Impact studies should be required in cases where development impacts wetlands, including road construction. Mitigation of any damage should be required.

27.3.2 Management Objective

Increase public understanding of, and involvement in, wetlands conservation.[2]

Policies and Guidelines

Support public education efforts about wetland conservation.

27.3.3 Management Objective

Inventory existing natural resources including prioritizing wetland ecosystem needs.[3]

Policies and Guidelines

Inventory natural resources and including prioritizing wetland ecosystem needs.

27.3.4 Management Objective

Consult about wetland identification.

Policies and Guidelines

Coordinate with land management agencies in wetland identification protocols and projects.

27.4 References

[1] Novitzki, R., D. Smith, and J. Fretwell. 1996. Wetland Functions, Values, And Assessment. National Water Summary On Wetland Resources. Washington, D.C.: US Government Printing Office.

[2] Box Elder County. 1998. Box Elder County General Plan,Wetlands, p. 4.

[3] Box Elder County. 1998. Box Elder County General Plan,Community Dev & Land Use, p.7-8.

28. WILD AND SCENIC RIVERS

The Wild and Scenic Rivers (WSR) designation is reserved for free-flowing waterways that exhibit "outstandingly remarkable" value (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

28.1 Management Setting

Context

Box Elder County currently does not have any rivers officially designated as wild and scenic but the US Forest Service (Forest Service) has decided that Willard Creek, from the source to the Forest boundary, has "scenic" qualities. The Forest Service is currently managing Willard Creek under the scenic classification.[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.

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 rivers 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]) and 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 BLM follows the Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]).

28.2 Desired Future State

Box Elder County does not desire to have any river segment designated as Wild and Scenic.

28.3 Management Objectives and Associated Policies and Guidelines

28.3.1 Management Objective

Oppose the designation of any river segment in Box Elder County as Wild and Scenic.

Policies and Guidelines

- Maintain active county participation in federal and state public land/resource planning processes.
- Support the policy of multiple-use and sustained yield land management practices.

28.4 References

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

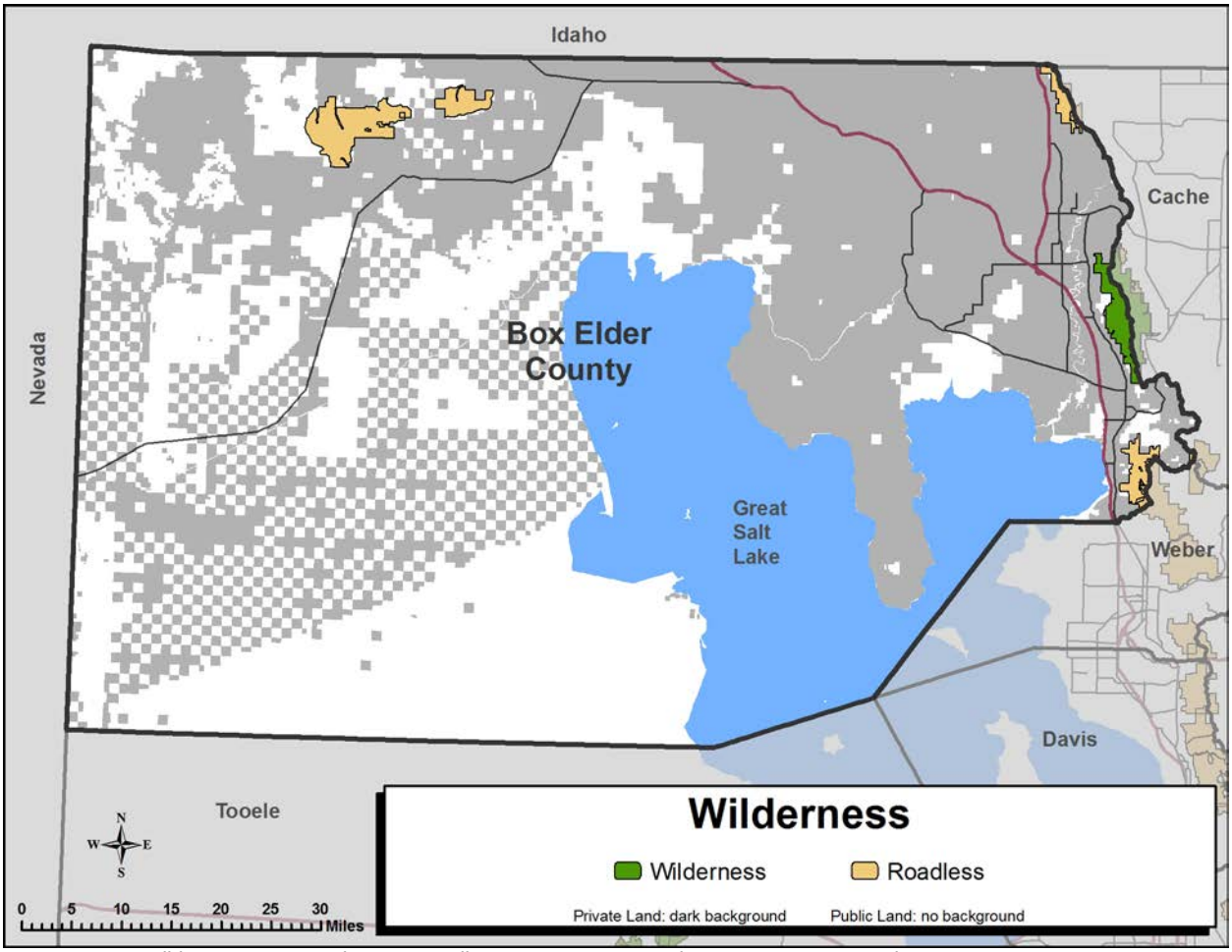
[2] US Forest Service. 2003. Revised Forest Plan for the Wasatch-Cache National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5354094.pdf (accessed March 23, 2017).

29. 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 Recommendation Wilderness Areas. The US Bureau of Land Management (BLM) special designations include Areas of Critical Environmental Concern (ACEC), Wilderness Study Areas, and Resource Conservation 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.

29.1 Management Setting

Context

Wilderness areas are designated by the US Congress after land managers recommend specific areas for designation. Lands which appear to qualify as wilderness are designated as Recommended Wilderness areas (Forest Service) through Forest Plan procedures or Wilderness Study Areas (BLM) in Resource Management Plans. In both cases, the National Environmental Policy Act (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 default 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 (for Forest Service) or Areas of Critical Environmental Concern (for BLM) are management designations implemented through land management plans and Resource Management Plans.

Box Elder County has designated wilderness in the Wellsville Mountains on the eastern side of the county. Other lands in the western portion of the county have been proposed for wilderness designation under various wilderness proposals by the BLM and other private groups.[1]

Findings

Box Elder County has 11,876 acres of designated Wilderness under Forest Service management (Table 29.1). The county has no designated Wilderness under BLM management. There are no Forest Service Recommended Wilderness Areas or BLM Wilderness Study Areas in the county. Box Elder County has 45,275 acres of lands covered under the 2001 Roadless Area Rule (Table 29.2). There are no ACECs on BLM lands in the county.

Table 29.1. Designated Forest Service Wilderness in Box Elder County.

WILDERNESS AREA	ACRES
Wellsville Mountain Wilderness	11,876

Source: SITLA land ownership spatial database.

Table 29.2. Areas covered under the 2001 Roadless Area Rule within Box Elder. County. There are no ACECs in Box Elder County.

FOREST SERVICE ROADLESS AREAS	ACRES
Clarkston Mountain	5,206
Clear Creek	7,189
Public Grove	222
Raft River	23,976
Willard	8,682
Total	45,275

Source: Forest Service GIS data.

Box Elder County 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 NEPA (42 USC §4321 et seq. [1969]) and 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]), while the BLM follows the Federal Land Policy and Management Act (43 USC §1701 et seq. [1976]).

The Wellsville Mountain Wilderness area was officially designated as Wilderness by the Utah Wilderness Act of 1984 (Public Law 98-428 [1984]). Since that time no additional land in the county have been designated as Wilderness by Congress.

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.

29.2 Desired Future State

Box Elder County desires officially designated wilderness to be managed to support recreation. The county does not desire new wilderness area designations or an expansion of the existing Wilderness Area.

Any public lands outside of the existing of the Wellsville Mountain Wilderness should not be managed as if they are or may become wilderness, including lands categorized as roadless, Wild and Scenic River, or other unofficial proposed or recommended wilderness areas.

29.3 Management Objectives and Associated Policies and Guidelines

29.3.1 Management Objective

Support recreation in officially designated wilderness areas.

Policies and Guidelines

Support recreation in officially designated wilderness.

29.3.2 Management Objective

Oppose the designation of any new wilderness areas in Box Elder County.

Policies and Guidelines

- Maintain active County participation in federal and state public land/resource planning processes.[3]
- Maintain working partnerships with public land/resource management agencies.[3]
- Support the policy of multiple-use and sustained yield land management practices.[3]
- Litigate if necessary.

29.4 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).

[2] US Forest Service. 2003. Sawtooth National Forest Land and Resource Management Plan, Amended 2012. https://www.fs.usda.gov/detail/sawtooth/landmanagement/planning/?cid=stelprdb5391896 (accessed April 14, 2017).

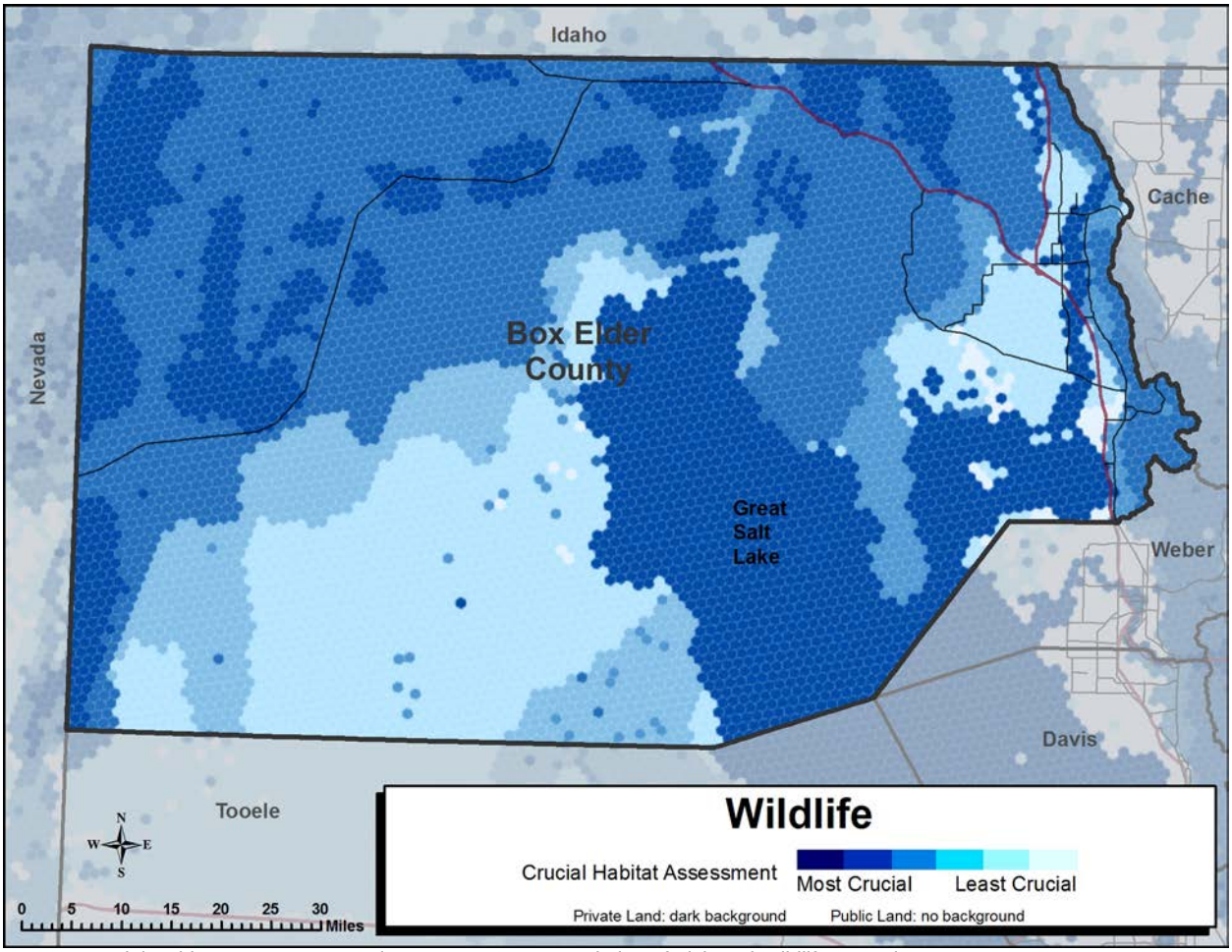
[3] Box Elder County. 1998. Box Elder County General Plan, County Goals, Public Lands, Fed & State, p. 2.

30. 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.

30.1 Management Setting

Context

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

The Bear River Migratory Bird Refuge is a hemispherically important component of the migratory bird flyway. Hunting and wildlife viewing are increasing in economic impact in Box Elder County. The harvest of brine shrimp and cysts from the Great Salt Lake are also an important component of the local economy.

Findings

The Utah Department of Wildlife Resources (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 Committees (RACs) that provide local input on wildlife related issues. Each RAC 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 30.1 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) and Resource Management Plans (for the Bureau of Land Management) as well as during National Environmental Policy Act (NEPA) analysis.

Table 30.1. Acres and Percentages of Generalized and Ranked Crucial Wildlife Habitat.

GENERALIZED HABITAT		BOX ELDER COUNTY		PUBLIC LAND		PRIVATE LAND	
Rank		Acres	Percentage	Acres	Percentage	Acres	Percentage
Most Crucial Habitat	1	1,313,135	30	947,498	22	365,634	8
	2	1,512,301	35	551834	13	960,464	22
	3	168,899	4	26,982	1	141,917	3
	4	433,918	10	287,610	7	146,307	3
	5	848,896	20	577,772	13.5	271,122	6.5
Least Crucial Habitat	6	29,563	1	18,464	0.5	11,099	0.5

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

Legal Context

Box Elder County recognizes the authority of the DWR and the Wildlife Board and 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.

30.2 Desired Future State

Box Elder County desires to maintain healthy native wildlife populations. Residents enjoy participating in wildlife-related activities and feel that wildlife and wildlife habitat should be considered in future development decisions. The county desires to protect and enhance natural landscapes, ecosystems, and the biodiversity of the county to support healthy wildlife populations. The county desires to maintain and increase economic benefits derived from hunting and wildlife viewing. Conflicts between wildlife and other land use objectives may require mitigation.

30.3 Management Objectives and Associated Policies and Guidelines

30.3.1 Management Objective

Wildlife is an important component of public land management and but should not take a priority over livestock production. Address agricultural impacts caused by big game animals and predators.

Policies and Guidelines

- Meet the needs of wildlife, provided wildlife populations are kept at a reasonable minimum so as to not interfere with originally permitted Animal Unit Month (AUM) levels under the Taylor Grazing Act.[2]

- Box Elder County regards the land which comprises the grazing districts and allotments on public lands as still more valuable for grazing than for any other use which might exclude livestock grazing. Such other uses include but are not limited to conversion of AUM's to wildlife or wilderness uses.[2]

- Any grazing animal unit months that may have been reduced due to rangeland health concerns should be restored to livestock when rangeland conditions improve. They should not be converted to wildlife use.[2]

30.3.2 Management Objective

Support the general objective of Utah's Wildlife Action Plan, which is to plan for managing native wildlife species and their habitats to help prevent listings under the Endangered Species Act.

Policies and Guidelines

- Support the general objective of Utah's Wildlife Action Plan, which is to plan for managing native wildlife species and their habitats to help prevent listings under the Endangered Species Act.[1]

- Provide adequate habitat components for sustainable big game populations coordinated with State wildlife management agencies, private lands and other resource needs and priorities.[3]

- Provide for connectivity of continuous large patches of forested habitat for interior forest-dependent and wide-ranging species (such as lynx, wolverine and migratory birds). Provide suitable habitat for prey species such as hares, squirrels, and small mammals.[2]

- Provide for sustained diversity of species at the genetic, populations, community and ecosystem levels.[4]

- Maintain communities within their historic range of variation that sustains habitats for viable populations of species.[4]

- Reduce potential for uncharacteristic high-intensity wildfires, and insect epidemics.[4]

- Continuing the use of appropriate methods for reducing the spread and dominance of invasive species.[5]

- Focus on approximating natural disturbances and processes by restoring composition, age class diversity, patch sizes, and patterns for all vegetation types."[4]

- New roads are planned and sited in areas where there are limited impacts to wildlife, especially aquatic systems such as riparian areas and wetlands. When existing roads are maintained, barriers to wildlife movement are altered to allow for movement.[1]

- Fire is excluded from habitats in which potential burns now would be frequent, large, and destructive to soils and native vegetation to the habitats are being actively managed (treated) to reduce components or factors that promote risk of catastrophic fire, such as cheatgrass, and excessive conifer encroachment.[1]

- Restore or maintain hydrologic functions.[3]

- 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.[6]

30.3.3 Management Objective

Include wildlife and wildlife habitat when planning or making decisions about future development.

Policies and Guidelines

Include wildlife and wildlife habitat when planning or making decisions about future development, and use local communication tools (meetings, website, newsletter, etc.) to dispel myths about ramifications of allowing agency monitoring of wildlife on private property, especially sensitive species.[7]

30.3.4 Management Objective

Support efforts to maintain or increase the economic benefits derived from hunting and wildlife viewing.

Policies and Guidelines

Support efforts to maintain or increase the economic benefits derived from hunting and wildlife viewing.

30.4 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] Box Elder County. 1998. Box Elder County General Plan, Exhibit A.

[3] 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).

[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] 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).

[6] 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 March 14, 2017).

[7] 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).

BIO-WEST