



# TOWN OF JACKSON PLANNING & BUILDING DEPARTMENT

## TRANSMITTAL MEMO

### Town of Jackson

- ☒ Public Works/Engineering
- ☐ Building
- ☐ Title Company
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- ☐ Bresnan Communications

### Special Districts

- ☐ START
- ☐ Jackson Hole Fire/EMS
- ☐ Irrigation Company

Date: March 9, 2022	<b>REQUESTS:</b>  The applicant is submitting an Environmental Analysis for the properties legally known as PT SW1/4SE1/4, SEC. 28, TWP. 41, RNG. 116 PARCEL C and PT S1/2SE1/4, SEC. 28, TWP. 41, RNG. 116 PARCEL D, PIDNs 22-41-16-28-4-00-038 and 22-41-16-28-4-00-039  For questions, please call Tyler Valentine at 733-0440, x1305 or email to the address shown below. Thank you.
Item #: P22-052	
Planner: Tyler Valentine  Phone: 733-0440 ext. 1305  Email: <a href="mailto:tvalentine@jacksonwy.gov">tvalentine@jacksonwy.gov</a>	
<b>Owner:</b> Lukas Farms, LLC PO Box 3000 PMB Jackson, WY 83002  <b>Applicant:</b> Jorrgensen Associates PO Box 9550 Jackson, WY 83002	
<b>Please respond by: March 23, 2022 (Sufficiency) March 30, 2022 (with Comments)</b>	

**RESPONSE:** For Departments not using Trak-it, please send responses via email to:  
[alangle@jacksonwy.gov](mailto:alangle@jacksonwy.gov)



**JORGENSEN**  
It's About People, Trust and Know How

PO Box 9550 · 1315 HWY 89 S., Suite 201  
Jackson, WY 83002  
PH: 307.733.5150  
[www.jorgeng.com](http://www.jorgeng.com)

March 8, 2022

Mr. Tyler Valentine  
Teton County Planning Dept.  
P.O. Box 1727  
200 South Willow St.  
Jackson, WY 83001  
*-Digitally Delivered to [planning@jacksonwy.gov](mailto:planning@jacksonwy.gov) -*

**RE: Planning Permit Application for an Environmental Analysis (EA) for Parcels C & D of T-Map 501**

Dear Tyler,

Enclosed you will find an Environmental Analysis Update prepared by Alder Environmental on behalf of our client Lukas Farms, LLC. The properties included in the report are more specifically located within PT SW1/4SE1/4 of Section 28 Township 41N, Range 116W in the Town of Jackson, Wyoming and legally described as Parcels C & D of T-Map 501.

- Planning Permit Application
- Alder Environmental Analysis Update, dated February 4, 2022
- Biota Research and Consulting, Inc. Environmental Analysis, dated July 31, 2000
- T Map 501
- Letter of Authorization

The owner of both Parcels C & D seeks a boundary adjustment between parcels. A Zoning Compliance Verification for a Boundary Adjustment will be submitted subsequently and will accompany this EA Update. Both properties are in the TOJ-Rural Zone, District 9.4 County Valley - Gros Ventre Buttes, and are entirely within the Natural Resources Overlay (NRO).

Please call me if you have any questions, or if you require additional information at this time. Thank you for your assistance.

Sincerely,  
JORGENSEN ASSOCIATES, INC.

Ron Levy  
Land Use Project Manager



**PLANNING PERMIT APPLICATION**  
**Planning & Building Department**

150 E Pearl Ave. | ph: (307) 733-0440  
P.O. Box 1687 | [www.townofjackson.com](http://www.townofjackson.com)  
Jackson, WY 83001

**For Office Use Only**

Fees Paid \_\_\_\_\_ Date & Time Received \_\_\_\_\_  
Application #s \_\_\_\_\_

**Please note:** Applications received after 3 PM will be processed the next business day.

**PROJECT.**

Name/Description: \_\_\_\_\_  
Physical Address: \_\_\_\_\_  
Lot, Subdivision: \_\_\_\_\_ PIDN: \_\_\_\_\_

**PROPERTY OWNER.**

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ ZIP: \_\_\_\_\_  
E-mail: \_\_\_\_\_

**APPLICANT/AGENT.**

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ ZIP: \_\_\_\_\_  
E-mail: \_\_\_\_\_

**DESIGNATED PRIMARY CONTACT.**

\_\_\_\_\_ Property Owner \_\_\_\_\_ Applicant/Agent

**TYPE OF APPLICATION.** Please check all that apply; review the type of application at [www.townofjackson/200/Planning](http://www.townofjackson/200/Planning)

**Use Permit**

\_\_\_\_\_ Basic Use  
\_\_\_\_\_ Conditional Use  
\_\_\_\_\_ Special Use

**Relief from the LDRs**

\_\_\_\_\_ Administrative Adjustment  
\_\_\_\_\_ Variance  
\_\_\_\_\_ Beneficial Use Determination  
\_\_\_\_\_ Appeal of an Admin. Decision

**Physical Development**

\_\_\_\_\_ Sketch Plan  
\_\_\_\_\_ Development Plan  
\_\_\_\_\_ Design Review

**Subdivision/Development Option**

\_\_\_\_\_ Subdivision Plat  
\_\_\_\_\_ Boundary Adjustment (replat)  
\_\_\_\_\_ Boundary Adjustment (no plat)  
\_\_\_\_\_ Development Option Plan

**Interpretations**

\_\_\_\_\_ Formal Interpretation  
\_\_\_\_\_ Zoning Compliance Verification

**Amendments to the LDRs**

\_\_\_\_\_ LDR Text Amendment  
\_\_\_\_\_ Map Amendment

**Miscellaneous**

\_\_\_\_\_ Other: \_\_\_\_\_  
\_\_\_\_\_ Environmental Analysis

**PRE-SUBMITTAL STEPS.** To see if pre-submittal steps apply to you, go to [www.townofjackson.com/200/Planning](http://www.townofjackson.com/200/Planning) and select the relevant application type for requirements. Please submit all required pre-submittal steps with application.

Pre-application Conference #: \_\_\_\_\_ Environmental Analysis #: \_\_\_\_\_  
Original Permit #: \_\_\_\_\_ Date of Neighborhood Meeting: \_\_\_\_\_

**SUBMITTAL REQUIREMENTS.** Please ensure all submittal requirements are included. The Planning Department will not hold or process incomplete applications. Partial or incomplete applications will be returned to the applicant. Go to [www.townofjackson.com/200/Planning](http://www.townofjackson.com/200/Planning) and select the relevant application type for submittal requirements.

Have you attached the following?

\_\_\_\_\_ **Application Fee.** Fees are cumulative. Go to [www.townofjackson.com/200/Planning](http://www.townofjackson.com/200/Planning) and select the relevant application type for the fees.

\_\_\_\_\_ **Notarized Letter of Authorization.** A notarized letter of consent from the landowner is required if the applicant is not the owner, or if an agent is applying on behalf of the landowner. Please see the Letter of Authorization template at <http://www.townofjackson.com/DocumentCenter/View/845/LetterOfAuthorization-PDF>.

\_\_\_\_\_ **Response to Submittal Requirements.** The submittal requirements can be found on the TOJ website for the specific application. If a pre-application conference is required, the submittal requirements will be provided to applicant at the conference. The submittal requirements are at [www.townofjackson.com/200/Planning](http://www.townofjackson.com/200/Planning) under the relevant application type.

**Note:** Information provided by the applicant or other review agencies during the planning process may identify other requirements that were not evident at the time of application submittal or a Pre-Application Conference, if held. Staff may request additional materials during review as needed to determine compliance with the LDRs.

Under penalty of perjury, I hereby certify that I have read this application and associated checklists and state that, to the best of my knowledge, all information submitted in this request is true and correct. I agree to comply with all county and state laws relating to the subject matter of this application, and hereby authorize representatives of Teton County to enter upon the above-mentioned property during normal business hours, after making a reasonable effort to contact the owner/applicant prior to entering.

Garon M. Levy  
\_\_\_\_\_  
Signature of Property Owner or Authorized Applicant/Agent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name Printed

\_\_\_\_\_  
Title



# ENVIRONMENTAL ANALYSIS UPDATE

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**Lukas Farms LLC**

Parcels C & D

Town of Jackson, WY

Parcels: 22-41-16-28-4-00-038

22-41-16-28-4-00-039



November 10, 2021

**Prepared for:**

Lukas Farms LLC

c/o Diana Welch

P.O. Box 30000 PMB

Jackson, WY 83002

**Prepared by:**

**ALDER**ENVIRONMENTAL

water | wetlands | ecological consulting

Jackson, WY [alderenvironmental.com](http://alderenvironmental.com)

## TABLE OF CONTENTS

<b>INTRODUCTION .....</b>	<b>2</b>
<b>METHODS .....</b>	<b>2</b>
<b>HABITAT INVENTORY .....</b>	<b>2</b>
SITE CONDITIONS .....	2
VEGETATIVE COVER TYPES .....	2
<i>Scrub-Shrub Wetland</i> .....	3
<i>Tall Shrub</i> .....	3
<i>Mature Cottonwood</i> .....	3
<i>Juniper</i> .....	3
<i>Mesic Shrub</i> .....	3
<i>Mesic Grassland</i> .....	4
<i>Lawns &amp; Landscaping</i> .....	4
<i>Developed/Disturbed</i> .....	4
<i>Surface Water</i> .....	4
PROTECTED WATER BODIES AND WETLANDS .....	4
<i>Waterbodies</i> .....	4
<i>Wetlands</i> .....	4
WILDLIFE HABITATS PROTECTED BY THE NRO .....	4
<i>Moose – Crucial Winter Habitat</i> .....	5
<i>Mule Deer – Crucial Winter Range &amp; Migration Corridors</i> .....	5
<i>Elk Winter Range &amp; Migration Corridors</i> .....	5
<i>Trumpeter Swan – Crucial Winter Habitat &amp; Nesting Habitat</i> .....	5
<i>Snake River Cutthroat Trout – Spawning Habitat</i> .....	6
<i>Bald Eagle – Crucial Winter Habitat &amp; Nesting Habitat</i> .....	6
THREATENED AND ENDANGERED SPECIES .....	6
<b>DEVELOPMENT IMPACT ASSESSMENT .....</b>	<b>7</b>
DESCRIPTION OF PROPOSED DEVELOPMENT .....	7
PROTECTED RESOURCES & HABITAT SETBACKS/BUFFERS .....	7
HABITAT IMPACT ASSESSMENT .....	7
PROJECT VICINITY IMPACT STATEMENT .....	8
HUMAN USE RECOMMENDATIONS .....	8
HABITAT ENHANCEMENT PLAN .....	9
<b>REFERENCES.....</b>	<b>10</b>

### APPENDIX A: FIGURES

### APPENDIX B: PHOTOGRAPHS

## INTRODUCTION

The purpose of this document is to provide an Environmental Analysis (EA) Update for the Lukas Farms LLC Property which consists of two adjacent parcels, Parcel C and Parcel D (the Property) in the town of Jackson, WY. The Property is on the east facing slope of East Gros Ventre Butte and along Flat Creek and lies completely within the Natural Resources Overlay (NRO) (Appendix A – Figure 1). The slopes just above the Property are designated as crucial mule deer winter range by Wyoming Game and Fish Department (WGFD). The Property itself also has steep south facing slopes and should be considered crucial mule deer winter habitat and therefore is confirmed to be within the NRO.

The original *Environmental Analysis of the Halpin Property, Teton County, WY* was submitted on July 31, 2000 by Biota Research and Consulting, Inc. to determine areas suitable for development (Biota 2000). This new EA seeks to change the lot configuration with a boundary adjustment between Parcel C and D that involves the division of a portion of one property so that the divided portion can be completely merged into an adjacent property. This EA documents potential impacts to protected natural resources as a result of the proposed activities (Appendix A – Figure 4). The landowner is requesting that the Town of Jackson determines the proposed boundary adjustment and building envelope comply with the Town of Jackson LDRs, Div. 5.2 *Environmental Standards Applicable in Specific Areas*.

## METHODS

Alder Environmental staff inventoried the natural resources and existing conditions within the Property on August 20, 2021. Wildlife habitat, protected waterbodies and wetlands, and vegetative cover types were mapped based on the site visits, previous EA (EVA2000-Halpin), and Wyoming Game and Fish Department (WGFD) wildlife layers. Figure 2 displays the existing conditions and vegetative cover types present within the Property. Photos of current conditions of the Property are provided in Appendix B.

## HABITAT INVENTORY

### SITE CONDITIONS

In this report, the Property includes both Parcel C and D. Parcel C is 0.82 acres and shares property boundaries with Parcel D on three sides. The southeast boundary of Parcel C is the centerline of Flat Creek. Existing development on Parcel C consists of a residential home, guest house, cabin, and a shed/sauna as well as a driveway, parking areas, and landscaping.

Parcel D consists of 12.08 acres of mostly undeveloped land on the steep, east facing slope of East Gros Ventre Butte and is composed primarily of mesic shrub and mesic grassland (Appendix A – Figure 2). The southeast corner of Parcel D, bordered by Flat Creek, contains landscaping, gardens, fringe wetlands, a shed/yoga studio, and a greenhouse – all associated with the development on Parcel C. There is a yoga platform in the northeast corner of Parcel D with a passive path leading up to the platform. The Property is zoned Rural Residential-Town.

The Property lies within the NRO and consists primarily of mesic shrub dominated by sagebrush, rabbitbrush, and native bunchgrass species.

### VEGETATIVE COVER TYPES

Town of Jackson Land Development Regulations states that development should be located to avoid higher quality habitats or vegetative cover (LDR 5.2.1.E.1 *Minimizes Wildlife Impact*). However, the Town of Jackson LDRs do not define higher quality vegetative cover types, so this report defers to the types and ordinal rankings as defined in the Teton County LDRs (LDR 5.2.1.F, *Vegetative Cover Type Standards*).

Vegetative cover types on the Property have shifted since the 2000 EA due to succession and shrub recruitment. The Property's vegetative cover consists of mesic shrub, mesic grassland, tall shrub, mature

cottonwood forest, juniper, scrub-shrub wetlands, and disturbed areas (Appendix A – Figure 2). Mesic shrub comprises the largest portion of the Property with abundant big sagebrush (*Artemisia tridentata*) and rubber rabbitbrush (*Ericameria nauseosa*) intermixed with native bunch grass species.

The following is a summary of the vegetative cover types on the Property, including their Ordinal Ranking values.

**Table 1. Vegetative Cover Types within the Property and Habitat Priority Ordinal Ranking**

VEGETATIVE COVER TYPE	AREA (ACRES)	% OF TOTAL AREA	HABITAT PRIORITY ORDINAL RANKING (10 BEING THE HIGHEST VALUE)
Scrub-Shrub Wetland	0.27	2%	10
Tall Shrub	1.37	11%	8
Mature Cottonwood	0.20	2%	6
Juniper	0.05	<1%	6
Mesic Shrub	5.73	44%	6
Mesic Grassland	4.66	36%	3
Xeric Grassland	0.05	<1%	1
Lawn & Landscaping	0.27	2%	1
Developed/Disturbed	0.19	1%	1
Surface Water	0.11	1%	NA
<b>TOTAL</b>	<b>12.90</b>	<b>100%</b>	

#### **Scrub-Shrub Wetland**

The Property contains 0.27 acres of scrub-shrub wetland (2% of total cover) which extends along the edge of Flat Creek on the southern corner of Parcel C into Parcel D. The fringe wetland is dominated by willow species (*Salix spp.*) bordered by sedges (*Carex nebrascensis*, *Carex utriculata*), meadow foxtail (*Alopecurus pratensis*), and tufted hairgrass (*Deschampsia cespitosa*). Scrub-shrub wetlands have an ordinal ranking of 10 due to their importance for wildlife habitat and water quality.

#### **Tall Shrub**

A total of 1.37 acres (10%) of the Property consists of tall shrub cover type dominated by serviceberry (*Amelanchier alnifolia*) with intermittent chokecherry (*Prunus virginiana*), snowberry (*Symphoricarpos albus*), and bunchgrasses. Tall shrub cover types have an ordinal ranking of 8 due to their value as wildlife habitat and browse for ungulates.

#### **Mature Cottonwood**

Approximately 0.20 acres of the Property (1.5%) comprises mature cottonwood forest in the area surrounding the existing residential buildings and development on Parcel C. This cover type has an ordinal ranking of 6 due to its importance for wildlife habitat; however, due to the proximity to human activity, this area's habitat value may be reduced.

#### **Juniper**

A total of 0.05 acres (0.3%) of the Property contains juniper cover type (nonmesic, coniferous forest) consisting of widely spaced Rocky Mountain juniper (*Juniperus scopulorum*) with a bunchgrass understory. This cover type has an ordinal ranking of 6 due to its value as wildlife habitat, and though it comprises a small area of the Property, it is connected to a larger area of juniper upslope from the Property.

#### **Mesic Shrub**

The dominant cover type on the Property is mesic shrub, with a total of 5.73 acres or 44% cover and comprising most of the undeveloped slopes of East Gros Ventre Butte on the Property. Big sagebrush (*Artemisia tridentata*) and rubber rabbitbrush (*Ericameria nauseosa*) dominate with abundant

bunchgrass species as well. This cover type has an ordinal ranking of 5 due to its importance for wildlife habitat, particularly for mule deer crucial winter habitat.

#### ***Mesic Grassland***

A total of 4.66 acres (36%) of the Property consists of mesic grassland made up of native and non-native bunchgrasses. This cover type has an ordinal ranking of 3 and also provides valuable winter habitat for mule deer.

#### ***Lawns & Landscaping/Developed/Disturbed***

A total of 0.27 acres (2%) of the Property consists of lawns and landscaping. A total of 0.19 acres (1%) of the Property is existing development or disturbance and residential structures as well as a driveway, parking areas, and a disturbed slope on the southern edge of the Property along Flat Creek. These areas have an ordinal ranking of 1.

#### ***Surface Water***

A total of 0.11 acres (1%) of the Property is surface water consisting of Flat Creek, which flows through southeastern portions of the Property.

### **PROTECTED WATER BODIES AND WETLANDS**

Figure 2 depicts the waterbodies and mapped wetlands that were identified on the Property during Alder's site visit. A wetland delineation was not conducted because further development is not planned near wetlands.

#### ***Waterbodies***

Alder identified Flat Creek as the only surface water on the Property. The southern corner of the Property borders Flat Creek as well as the southeast edge of the Property, which provides about 300 feet of creek-front property. Flat Creek is a tributary of the Snake River with headwaters in the Gros Ventre Mountains to the southeast. Flat Creek has perennial flows that fluctuate based on runoff, irrigation input, diversions, and losses due to infiltration (Biota, 2000) with average annual peak flows between 140 and 275 cfs (USGS). Northern Flat Creek, which runs through the Property, requires a minimum setback of 25 feet according to Town of Jackson LDR 5.1.1.D.2 *Setback/Buffer Required*.

Areas of the Property adjacent to Flat Creek are within FEMA Special Flood Hazard Areas Subject to Inundation by the 1% Annual Chance Flood Event, Zone AE (FEMA 2015).

#### ***Wetlands***

The 2000 EA delineated palustrine emergent and scrub-shrub wetlands adjacent to Flat Creek on Parcel D of the Property. Alder mapped fringe wetland boundaries along Flat Creek during the August 2021 site visit on in Parcels C and D. The wetlands were identified as scrub-shrub wetlands due to the dominant cover of willow species. The wetlands are hydrologically supported by Flat Creek and groundwater. Wetlands are both federally and locally protected under the CWA and the Town of Jackson LDRs and natural wetlands receive a development setback of 30 feet according to Town of Jackson LDR 5.1.1.D.2 *Setback/Buffer Required*.

### **WILDLIFE HABITATS PROTECTED BY THE NRO**

Alder conducted an ecological review of the Property and Wyoming Game and Fish Department (WGFD) designated wildlife habitat to determine if any changes in protected wildlife resources had occurred since the 2000 EA. Alder's review indicates that the Property continues to provide habitat for Teton County and the Town of Jackson protected wildlife species, mule deer winter range and cutthroat trout spawning habitat. The slopes directly to the west of the Property are designated as mule deer crucial winter habitat by Wyoming Game and Fish Department (WGFD) and protected by the Town of Jackson (LDR Section 5.2.1.F, *Crucial Habitat Protection Standards*) (Figure 3). The Property also provides suitable winter habitat for elk and moose according to the 2017 Teton County Focal Species Habitat Mapping Project (Alder, 2017). Table 2 summarizes the Town of Jackson protected habitat and their associated wildlife species within 0.5 miles of the Property.

**Table 2. Habitat Types Protected by the NRO and Presence within 0.5 Miles of the Property.**

HABITAT TYPE	PRESENCE IN THE PROPERTY	PRESENCE WITHIN ½ MI OF PROPERTY
Moose Crucial Winter Habitat	Possible	Possible
Elk Migration Corridors	No	No
Elk Crucial Winter Range	Possible	Yes
Mule Deer Migration Corridors	No	No
Mule Deer Crucial Winter Range	Yes	Yes
Trumpeter Swan Nesting Habitat	No	Possible
Trumpeter Swan Winter Habitat	Possible	Yes
Snake River Cutthroat Trout Spawning Areas	Yes	Yes
Bald Eagle Nesting Habitat	No	No
Bald Eagle Crucial Winter Habitat	Yes	Yes

***Moose – Crucial Winter Habitat***

The Property does not contain WGFD designated crucial moose winter range (WGFD, 2012). Moose rely on palustrine-shrub or forest habitats, cottonwood, cottonwood/spruce, or subalpine fir forest, and, less frequently, xeric and mesic sagebrush grasslands, and mixed shrub habitat. The scrub-shrub wetlands and cottonwood on the southeast edge of the Property could potentially be used by moose in the harder winter months. Additionally, the 2017 Teton County Focal Species Habitat Mapping Project identified a small area on the Property on the slope of East Gros Ventre Butte as suitable winter habitat for moose. However, the area's close proximity to residential and commercial development and downtown Jackson might render winter use less hospitable.

***Mule Deer – Crucial Winter Range & Migration Corridors***

The Town of Jackson LDRs identify East Gros Ventre Butte as one of the five primary areas of mule deer crucial winter range which generally occurs at low elevations in shrub scrub-grassland habitat types (LDR Section 5.2.1.C.3, *Mule Deer*). WGFD designated crucial mule deer winter range is mapped just west of the Property (WGFD, 2012). However, the Property has the same habitat and connectivity to the mapped WGFD layer and therefore also contains crucial mule deer habitat. Additionally, the 2017 Teton County Focal Species Habitat Mapping Project indicates that suitable mule deer winter habitat exists on the Property (Alder 2017). Mule deer winter range is characterized by south-facing sagebrush or mesic shrub slopes (Riginos et al. 2013). The southeast-facing slopes of the Property, dominated by mesic shrub and grasslands, provide ideal habitat. The Property is also designated as spring/summer/fall habitat for mule deer by WGFD and extensive signs of mule deer including scat were observed during the August 2021 site visit. WGFD mule deer migration corridors do not exist on the Property or within 0.5 miles.

***Elk Winter Range & Migration Corridors***

There are no WGFD designated elk crucial winter ranges or migration routes mapped on the Property; however, elk crucial winter range is mapped 0.4 miles northeast of the Property near HWY 89/191 and within the Elk Refuge. The 2017 Teton County Focal Species Habitat Mapping Project indicates that the Property may serve as suitable winter habitat for elk (Alder 2017). Elk generally use grassland and shrub habitats with interspersed forests during the winter months (Boyce et al. 2003). Elk crucial spring/summer/fall habitat is mapped to east of the Property.

***Trumpeter Swan – Crucial Winter Habitat & Nesting Habitat***

Winter Trumpeter Swan surveys conducted by Wyoming Game and Fish Department (WGFD) in 2013, 2015, and 2018 do not document Trumpeter Swans within 0.5 mile of the Property (Figure 3) (data provided to Alder by S. Patla, WGFD). Northeast of the Property, Flat Creek widens into Elk Park Pond which provides suitable winter habitat for Trumpeter Swans. WGFD data has recorded

extensive winter swan activity within 0.6 miles of the Property and swan nests within 0.9 miles of the Property. Trumpeter swans generally require watercourse channels wider than 50 feet, banks with little shrub or tree cover, and gradual slopes for winter habitat. Additionally, aquatic beds with unconsolidated bottoms, soft substrates, and depths of less than 4.3 feet provide ideal winter habitat. The narrow and faster moving waters of Flat Creek flowing through the Property indicate that there is not suitable Trumpeter Swan winter habitat on the Property.

#### ***Snake River Cutthroat Trout – Spawning Habitat***

Flat Creek has Snake River Cutthroat Trout spawning habitat and is designated by WGFD. The 2017 Teton County Focal Species Habitat Mapping Project also identifies Fish Creek as providing suitable spawning habitat. Cutthroat trout generally spawn in cold, well oxygenated streams with gravel bottoms.

#### ***Bald Eagle – Crucial Winter Habitat & Nesting Habitat***

No Bald Eagle nests have been documented within 0.5 miles of the Property. WGFD identifies crucial Bald Eagle winter habitat within the southern part of the Property. The Property contains crucial mule deer winter habitat, which provides Bald Eagle with carrion during winter months. Therefore, the Property contains Bald Eagle crucial winter habitat (LDR Section 5.2.1.C.7, *Bald Eagle*).

### **THREATENED AND ENDANGERED SPECIES**

Of the current list of federally threatened and endangered species for Teton County, WY (Table 3) (USFWS, 2021), none are expected to nest or breed on the Property.

**Table 3. Threatened and Endangered Species of Teton County, WY in Jackson Hole Valley (USFWS, 2021)**

SPECIES	STATUS	PRESENT ON PROPERTY
<b>Birds</b>		
Yellow-Billed Cuckoo ( <i>Coccyzus americanus</i> )	Threatened	No
<b>Insects</b>		
Monarch Butterfly ( <i>Danaus plexippus</i> )	Candidate	Possible
<b>Fish</b>		
None		No
<b>Mammals</b>		
Canada Lynx ( <i>Lynx Canadensis</i> )	Threatened	No
Grizzly Bear ( <i>Ursus arctos horribilis</i> )	Threatened	Possible
<b>Plants</b>		
Whitebark pine ( <i>Pinus albicaulis</i> )	Proposed Threatened	No

The Yellow-billed Cuckoo range in Wyoming is within woody, riparian areas with dense understory vegetation (Bennett and Keinath 2003). It is not expected to occur on the Property due to a lack of riparian areas with dense understory habitat; however, rare incidental use by Yellow-billed Cuckoos is possible.

Canada lynx are known to use subalpine coniferous forests with extensive horizontal cover that also support snowshoe hare populations (Squires et al. 2010). This species is unlikely to occur on the Property.

Protections for grizzly bears within the Greater Yellowstone Ecosystems were recently restored in September 2018. The distribution of grizzly bears within the Greater Yellowstone Ecosystem has expanded throughout Teton County in recent years (Bjornlie and Haroldson 2018) but the Property's proximity to downtown development implicates that use by grizzly bears is possible, moreover, meaningful habitat is not present and wildlife managers do not encourage grizzly bear use in residential areas.



Whitebark pine was not observed in the Study Area during the 2021 site inventory and is not expected to grow on lower elevation slopes.

Monarch butterflies visit the Rocky Mountains during the summer months on their migration to overwintering sites, like Mexico and California. Monarchs depend on diverse nectar sources including species found in mesic shrub and mesic grasslands: Sulphur-flower buckwheat (*Eriogonum umbellatum*), Canada goldenrod (*Solidago canadensis*) and Rubber rabbitbrush (*Ericameria nauseosa*) (Fallon et al. 2016).

## DEVELOPMENT IMPACT ASSESSMENT

### DESCRIPTION OF PROPOSED DEVELOPMENT

The landowner is proposing to adjust the boundaries of the two parcels on the Property, specifically, to cut 3.4 acres from the southeast side of Parcel D and add this area to Parcel C. The result would be a 4.19 acre Parcel C consisting of the existing development by Flat Creek and the adjacent slope of East Gros Ventre Butte. Parcel D would decrease to 8.70 acres with no existing structures, composed primarily of mesic shrub and grassland slopes with the southeastern corner intersecting Flat Creek (Appendix A – Figure 4). The landowner is also proposing a 1.15-acre building envelope in the northeast corner of Parcel D for future residential development with access from Saddle Butte Road.

### PROTECTED RESOURCES & HABITAT SETBACKS/BUFFERS

The proposed building envelope is located over 300 feet from wetlands, well outside of the 30 ft wetland setback and 25 ft stream setback for northern Flat Creek.

### HABITAT IMPACT ASSESSMENT

The proposed building envelope and driveway are in crucial mule deer winter habitat even though not designated by WGFD. Within their crucial winter habitat, mule deer depend heavily on mesic sagebrush-grasslands and mixed shrub types (Town of Jackson 2018). East Gros Ventre Butte provides crucial winter habitat for mule deer with south facing slopes dominated by sagebrush (*Artemisia tridentata*) and bitterbrush (*Purshia tridentata*) (Alder 2017). The proposed building envelope will occur in tall shrub, mesic shrub, and mesic grassland.

The proposed building envelope consists of valuable habitat particularly for wintering mule deer including mesic shrub and tall shrub. However, this location is most suitable due to lower slope angles and proximity to Saddle Butte Drive which allows for the most direct access to potential development (Appendix A – Figure 5). Existing activity on Saddle Butte Drive may already impact this area of the Property, rendering it less ideal for wildlife. Most of the Property consists of slopes greater than 30%, and development is prohibited on slopes greater than 25% according to Town of Jackson LDRs 5.4.1. *Steep Slopes*. Therefore, the building envelope is the only area where topography allows for development. Furthermore, locating the building envelope in lower quality habitat would require traversing a driveway through valuable habitat which would likely be more detrimental to wildlife than the proposed location.

Potential future development in the proposed building envelope will impact tall shrub and mesic shrub requiring mitigation at 2 acres of mitigation to 1 acre of impacts requirement according to Town of Jackson LDRs 5.2.E.2. *Habitat Enhancement*.

A summary of the potential habitat impacts is provided in Table 4.



**Table 4. Assessment of the proposed development impacts to wildlife habitat and protected resources.**

HABITAT IMPACTS	DEVELOPMENT IMPACTS	DESCRIPTION OF AREA	PROTECTED HABITAT IMPACTED
Areas rendered unusable by proposed development for protected species	Yes	The building envelope and driveway are located in mesic shrub, tall shrub, and mesic grassland habitat (Appendix A – Figure 4).	Crucial winter Bald Eagle Habitat, Crucial Winter Mule Deer Range
Areas impacted, degraded, or fragmented to the extent they no longer support long-term use by protected species	Partial	Development will degrade protected species habitat, but locating the building envelope near the existing road will minimize fragmentation.	Crucial Mule Deer Winter Range, Crucial Winter Bald Eagle Habitat
Areas unaffected by proposed development where the quality of wildlife habitat is maintained	Yes	Tall shrub, mesic shrub, and mesic grassland are located outside of the building envelope.	Crucial Mule Deer Winter Range, Crucial Winter Bald Eagle Habitat
Areas enhanced as wildlife habitat relative to current conditions	Yes	Habitat enhancement areas will be determined later based on the 2:1 mitigation requirement for impacts to higher ranking habitats as a result of the proposed impacts. Offsite mitigation will be required.	Crucial Mule Deer Winter Range, Crucial Winter Bald Eagle Habitat
Areas where development poses a threat to the water quality of protected waterbodies and wetlands	No	None. The building envelope is far from wetlands and waterbodies with vegetation buffers to prevent stormwater runoff.	N/A
Locations where protected species may be displaced to by proposed development and the new location's habitat suitability for survival of affected species	Yes	Mule deer will be displaced from direct and permanent development footprints.	Crucial Mule Deer Winter Range

#### PROJECT VICINITY IMPACT STATEMENT

To the north of the Property are rural-residential properties part of the subdivision, Saddle Butte Heights. To the west are vacant properties owned by the town of Jackson and the State of Wyoming. To the east and south are rural residential, commercial residential, and high-density neighborhood properties within the Town of Jackson. The National Elk Refuge is just over a half mile away from the Property to the northeast. The proximity to public and protected lands and low density lots provides wildlife movement corridors through and around the Property; however, the nearness of downtown Jackson negatively affects wildlife species. Daily and seasonal movements of wildlife may be impacted within the Property due to the proposed activities; however, the permeability of the landscape to wildlife will remain similar given that the southern portion of the Property will be left undeveloped with valuable habitat.

#### HUMAN USE RECOMMENDATIONS

The following recommendations would assist with improving the quality of habitat available on the Property for general vegetative health and for use by wildlife once development has occurred.

*Lighting* – Bright lights will detrimentally affect wildlife movement and hinder avian species navigation abilities (Section 5.3.1 *Exterior Lighting Standards*). Motion sensor lights should be discouraged and

when not needed (e.g. the residence is unoccupied), lights should remain off for the benefit of wildlife. Bare light bulbs should be shielded from direct view when they can be seen from 5 feet above the ground and light fixtures shall be arranged to shine at an angle less than 90 degrees.

*Wildlife Friendly Fencing* – All future fences on the Property should be wildlife friendly with the exception of a vegetable garden, ornamental landscaping, or other small areas. No barbed wire fences were encountered; however, if present, these should be removed, and any new fences should be built in a wildlife friendly manner. Additionally, if a fence is installed or replaced it should follow the Wildlife Friendly Fencing Amendment (AMD2021-003, 11/2/2021) of the Town of Jackson Land Development Regulations, Section 5.1.2, *Wildlife Friendly Fencing*.

#### **HABITAT ENHANCEMENT PLAN**

The higher habitat value areas permanently impacted by development and rendered unusable to wildlife require mitigation in the form of habitat enhancements. Potential permanent impacts to higher value vegetative cover types include tall shrub and mesic shrub and will require mitigation by the Town of Jackson Planning Department at a 2:1 spatial ratio (mitigation to impact) per the Town of Jackson Land Development Regulations (Section 5.2.1.E, Impacting the NRO). Potential impacts are summarized in Table 5.

**Table 5. Potential impacts to vegetative cover types and required mitigation**

<b>COVER TYPE (ORDINAL RANKING)</b>	<b>BUILDING ENVELOPE (AC)</b>	<b>DRIVEWAY (AC)</b>	<b>TOTAL</b>	<b>REQUIRED MITIGATION (AC)</b>
Tall Shrub (8)	0.05	0.11	0.16	0.32
Mesic Shrub (5)	0.60	0.03	0.63	1.26
Mesic Grassland (3)	0.01	0.01	0.02	NA
Disturbed (1)		0.02	0.02	NA
<b>TOTAL</b>	<b>0.66</b>	<b>0.17</b>	<b>0.83</b>	<b>1.58</b>

The potential required mitigation due to the driveway and building envelope (as depicted in Figure 4) is 1.58 acres. Alder determined that on site mitigation is not possible and offsite mitigation will be required if all these impacts are realized. It is unlikely that the entire building envelope will be impacted and the final determination of on-site or off-site mitigation will be made during the final Habitat Enhancement Plan submittal.

A final Habitat Enhancement Plan that provides specifications on plantings, establishment and monitoring will be submitted with future development permit applications. A surety estimate will accompany the final Habitat Enhancement Plan.

## REFERENCES

- Alder 2017. Final Report: Focal Species Habitat Mapping for Teton County, WY. Alder Environmental LLC. Jackson, WY. April 2017.
- Bennett, J. and D. A. Keinath. 2003. Species assessment for Yellow-billed Cuckoo (*Coccyzus americanus*) in Wyoming. Wyoming Natural Diversity Database, Laramie, WY.
- Bjornlie, D. D., and M. A. Haroldson. 2019. Grizzly bear occupied range in the Greater Yellowstone Ecosystem, 1990-2018. Pages 25-28 in F. T. van Manen, M. A. Haroldson, and B. E. Karabensh, editors. Yellowstone grizzly bear investigations: annual report of the Interagency Grizzly Bear Study Team, 2018. U. S. Geological Survey, Bozeman, Montana, U.S.A.
- Biota Research and Consulting, Inc. (Biota). 2000. Environmental Analysis of the Halpin Property (EVA2000-Halpin). Teton County, WY.
- Boyce, M. S., Mao, J. S., Merrill, E. H., Fortin, D., Turner, M. G., Fryxell, J., and P. Turchin. 2003. Scale and heterogeneity in habitat selection by elk in Yellowstone National Park. *Ecoscience* 10:421-431.
- Fallon, C., Adamson, N.L., Jepsen, S., & Vaughan, M. 2016. Monarch Nectar Plants Rocky Mountains. Xerces Society for Invertebrate Conservation. Portland, OR.
- Riginos, C., Krasnow, K., Hall, E., Graham, M., Sundaresan, S., Brimeyer, D., Fralick, G., and D. Wachob. 2013. Mule Deer (*Odocoileus hemionus*) movement and habitat use patterns in relation to roadways in northwest Wyoming. Conservation Research Center and Teton Science Schools, Report No. FHWA-WY-13/08F, Jackson, WY.
- Squires, J. R., Decesare, N. J., Kolbe, J. A., and L. F. Ruggiero. 2010. Seasonal resource selection of Canada Lynx in managed forests of the Northern Rocky Mountains. *Journal of Wildlife Management* 74:1648-1660.
- Teton County. 2018. Land Development Regulations. May 3, 2021. Jackson, WY.
- Town of Jackson. 2018. Land Development Regulations. March 30, 2021. Jackson, WY.
- USFWS. 2021. iPaC – Information, Planning and Conservation System Teton County, WY Endangered Species Act species list. <https://ecos.fws.gov> (Accessed January 2021).
- WGFD. 2012. Big Game Ranges Geographic Information Systems Layers. Cheyenne, WY.
- WGFD. 2020. Bald Eagle Nest Flight Survey Data. Wyoming Game and Fish Department. Jackson, WY

## **APPENDIX A: FIGURES**

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Figure 1. Location

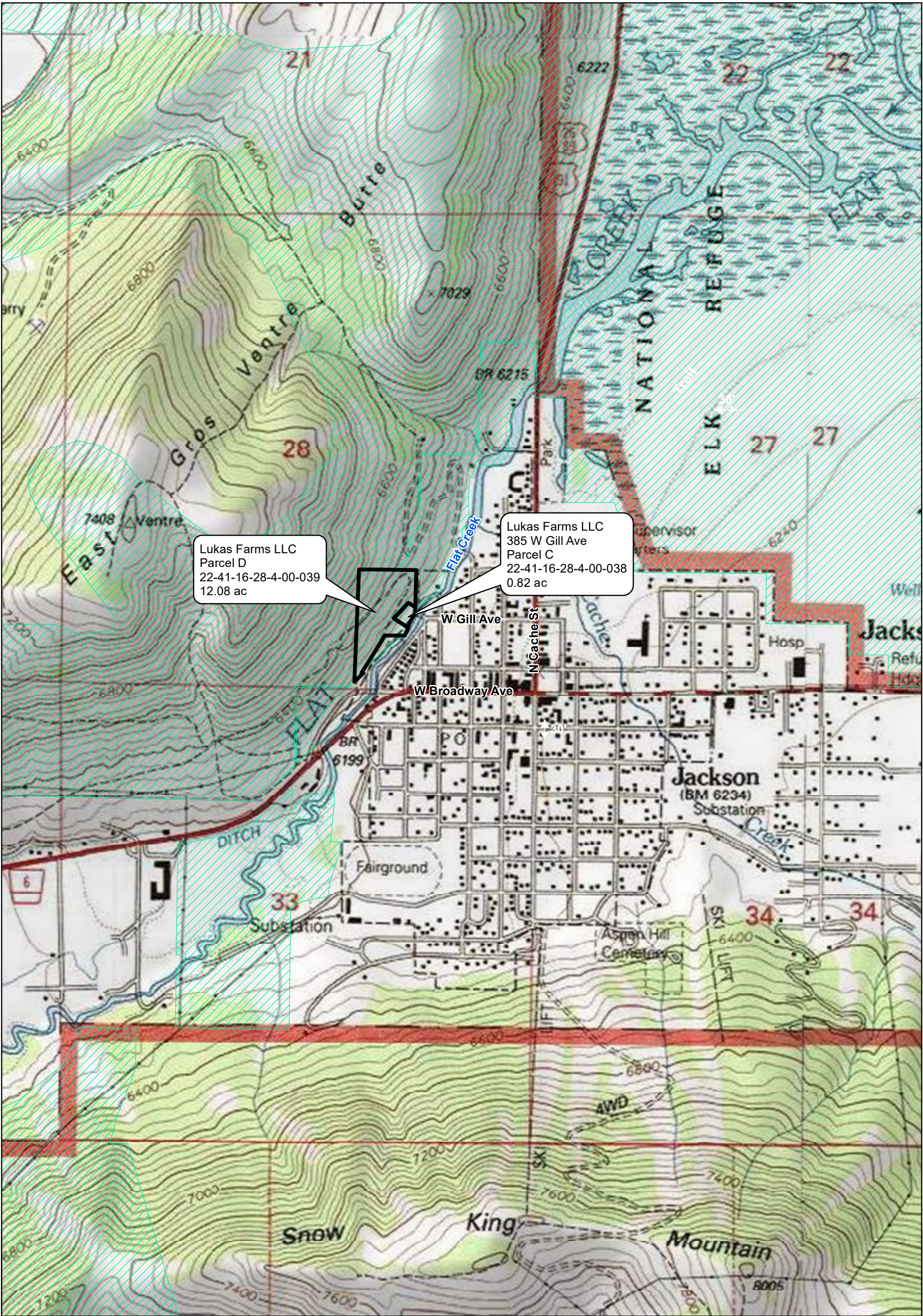
Figure 2. Vegetative Cover

Figure 3. Protected Wildlife Resources

Figure 4. Proposed Activities

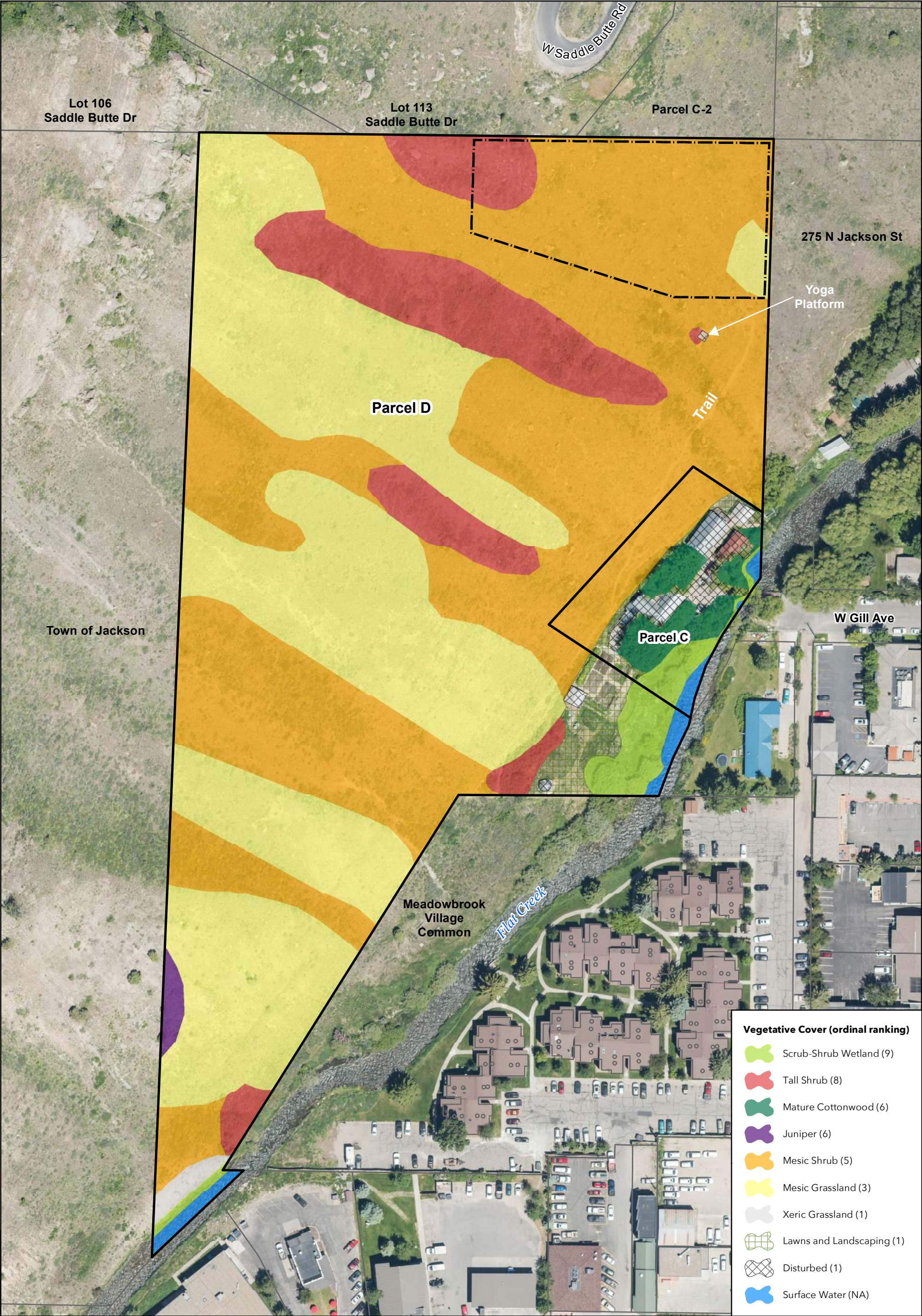
Figure 5. Slopes, Setbacks & Building Envelope



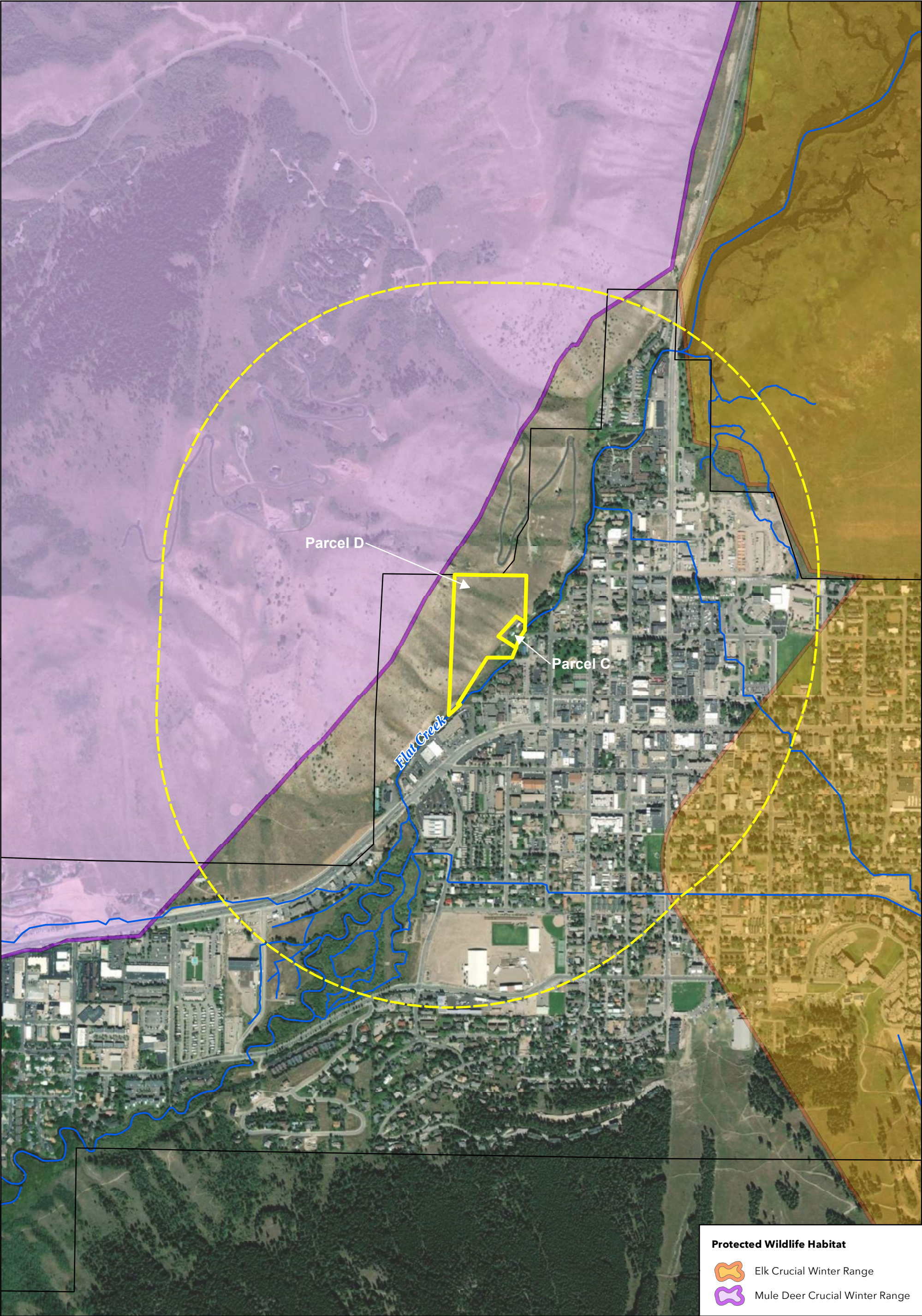


<div>Figure 1</div> <div>Location</div>	<div>Lukas Farms LLC ENVIRONMENTAL ANALYSIS UPDATE</div> <div>Parcels C and D Teton County, WY</div> <div>November 10, 2021</div>	<div>Legend</div> <div><div></div>Subject Properties</div> <div><div></div>Natural Resources Overlay</div>
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Protected Wildlife Habitat

-  Elk Crucial Winter Range
-  Mule Deer Crucial Winter Range

1 inch = 800 feet  
0 200 400 800 Feet



**ALDER**ENVIRONMENTAL  
water | wetlands | ecological consulting

Jackson, WY alderenvironmental.com





Figure 3

Protected Wildlife  
Resources

**Lukas Farms LLC  
ENVIRONMENTAL  
ANALYSIS UPDATE**  
Parcels C and D  
Teton County, WY

November 10, 2021

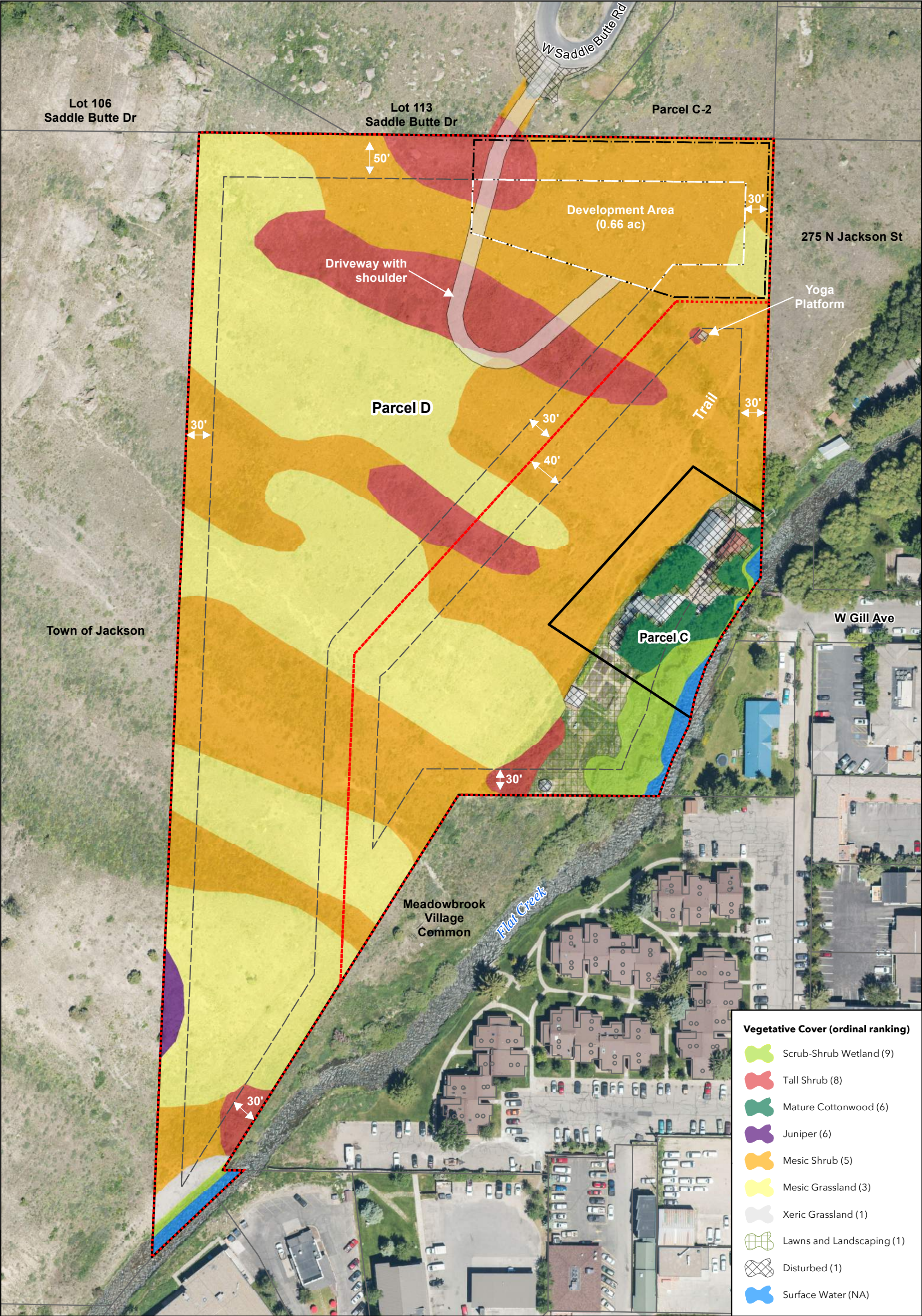
Legend

-  1/2 Mile Property Buffer
-  Subject Property
-  Town of Jackson
-  SWI Flowlines

Sources

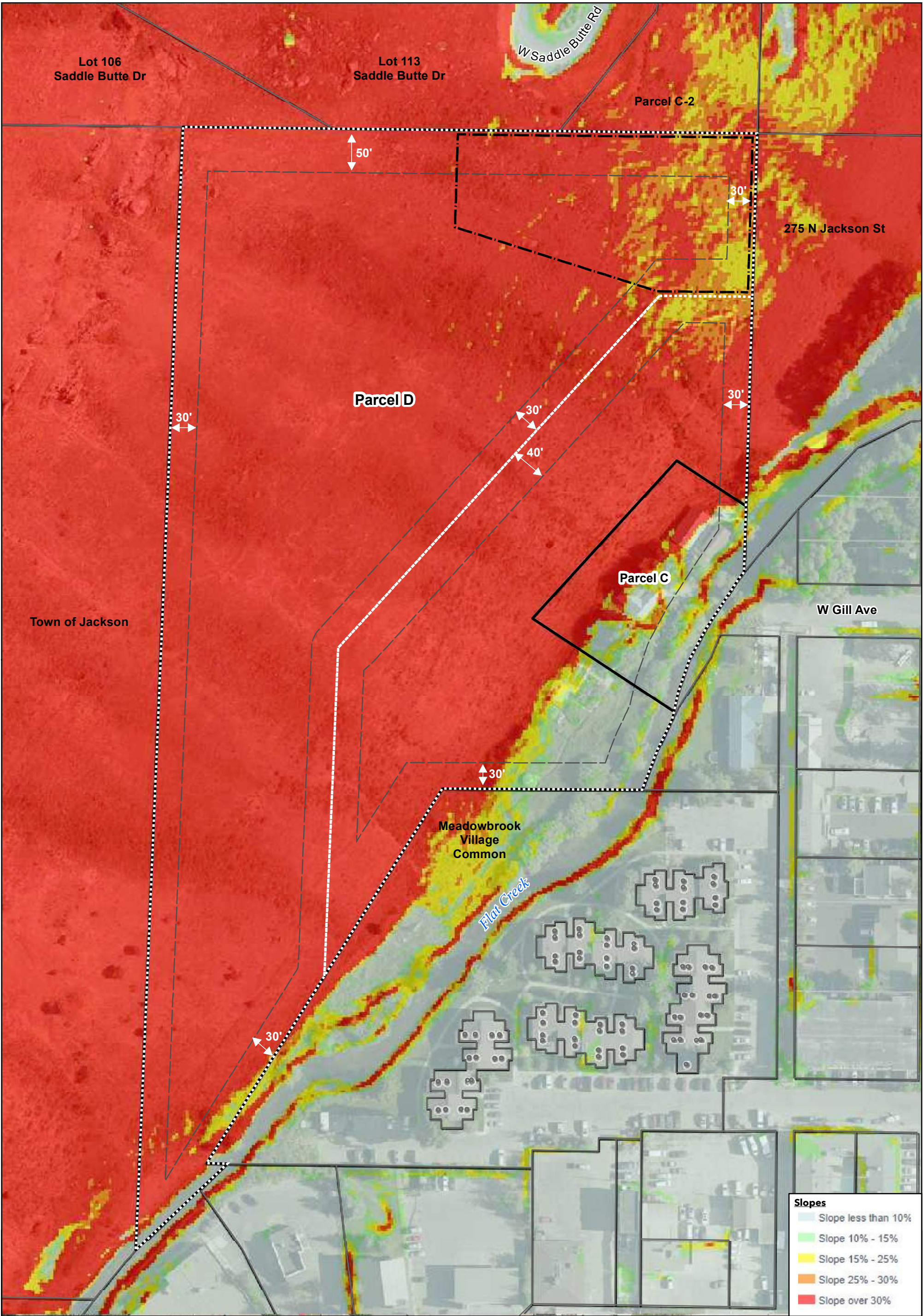
- TETON COUNTY
  - Aerial Imagery, June 2019
  - Ownership Boundaries
- WYOMING GAME & FISH DEPARTMENT
  - Teton County protected species habitat





<p><b>Figure 4</b></p> <p>Proposed Activities</p>	<p><b>Lukas Farms LLC ENVIRONMENTAL ANALYSIS UPDATE</b></p> <p>Parcels C and D</p> <p>Teton County, WY</p> <p>November 10, 2021</p>	<p><b>Legend</b></p> <ul style="list-style-type: none"><li>Proposed Adjusted Parcels</li><li>Subject Properties</li><li>Lots &amp; Parcels</li><li>Site Development</li><li>Building Envelope (0.66 ac)</li><li>Building Setbacks</li><li>Driveway</li></ul>	<p><b>Sources</b></p> <p>TETON COUNTY</p> <ul style="list-style-type: none"><li>- Aerial Imagery, June 2019</li><li>- Ownership Boundaries</li></ul> <p>JORGENSEN ENGINEERING</p> <ul style="list-style-type: none"><li>- Boundary Adjustment</li><li>- Proposed Development</li></ul> <p>ALDER ENVIRONMENTAL</p> <ul style="list-style-type: none"><li>- Habitat Inventory (8/20/21)</li></ul>	<p>1 inch = 100 feet</p> <p>0 25 50 100 Feet</p> <p><b>ALDER ENVIRONMENTAL</b></p> <p>water   wetlands   ecological consulting</p> <p>Jackson, WY alderenvironmental.com</p>
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<p><b>Figure 5</b></p> <p>Slopes, Setbacks &amp; Building Envelope</p>	<p><b>Lukas Farms LLC</b></p> <p><b>ENVIRONMENTAL ANALYSIS UPDATE</b></p> <p>Parcels C and D</p> <p>Teton County, WY</p> <p>November 10, 2021</p>	<p><b>Legend</b></p> <ul style="list-style-type: none"><li>Proposed Adjusted Parcels</li><li>Subject Properties</li><li>Lots &amp; Parcels</li><li>Proposed Building Envelope</li><li>Building Setbacks</li></ul>	<p><b>Sources</b></p> <p>TETON COUNTY</p> <ul style="list-style-type: none"><li>- Aerial Imagery, June 2019</li><li>- Ownership Boundaries</li><li>- Slopes</li></ul> <p>JORGENSEN ENGINEERING</p> <ul style="list-style-type: none"><li>- Boundary Adjustment</li><li>- Proposed Development</li><li>- Setbacks</li></ul>	<p>1 inch = 100 feet</p> <p>0 25 50 100 Feet</p> <p>N</p> <p><b>ALDER</b>ENVIRONMENTAL</p> <p>water   wetlands   ecological consulting</p> <p>Jackson, WY alderenvironmental.com</p>
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## APPENDIX B: PHOTOGRAPHS

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## LUKAS FARMS LLC EA UPDATE PHOTOGRAPHS



**Photo 1.** Tall shrub and mesic shrub in the northern portion of the property, looking southwest.



**Photo 2.** Mesic shrub in the foreground, tall shrub in the background, near the center of the Property, looking north.



**Photo 3.** Mesic grassland near the center of the Property, looking north.



**Photo 4.** Looking west at juniper in the southwest portion of the Property.

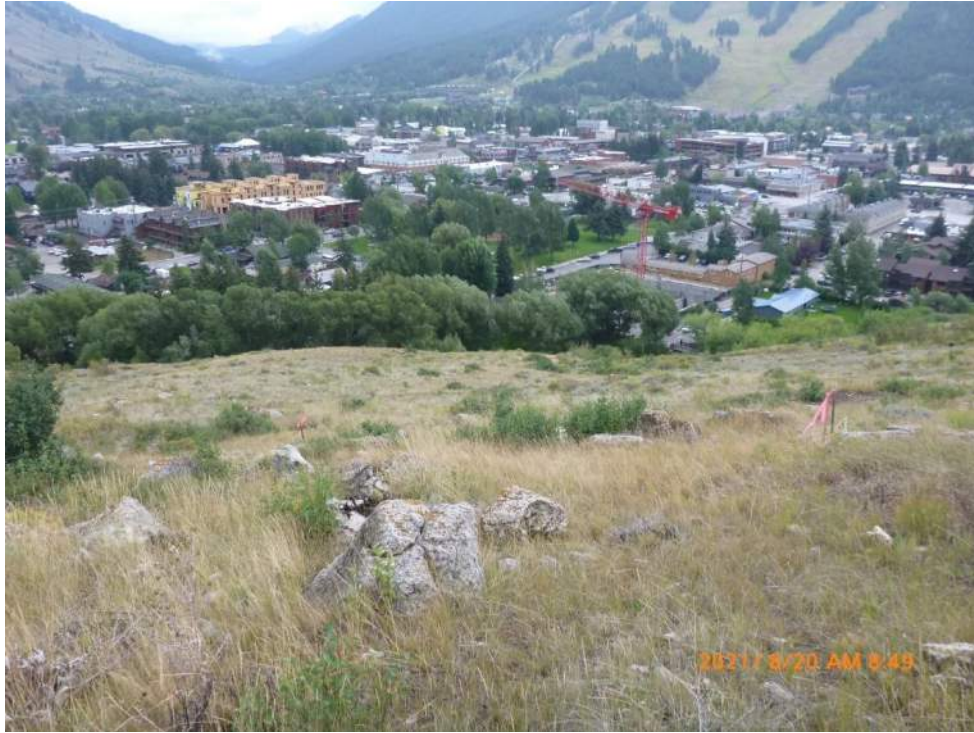




**Photo 5.** Looking south along the passive path to the yoga platform with mesic shrub in the foreground and the boundary of Parcel D and C in the background



**Photo 6.** Looking west, yoga platform surrounded by mesic shrub and talk shrub on the northern side of the Property



**Photo 7.** Looking east from outside the Property towards the proposed building envelope (marked with stakes).



**Photo 8.** From the northern edge of the Property looking south into the building envelope (marked with stakes).





**Photo 9.** Near the top of the building envelope (marked with stakes), looking northwest towards the proposed driveway access point on Saddle Butte Drive.



**Photo 10.** Looking south from Saddle Butte drive with proposed driveway access in foreground and the proposed building envelope in the background.





**Photo 11.** Looking southeast at tall shrub surrounding the yoga platform on the southern portion of the Property.



**Photo 12.** Looking east at mesic grassland in the foreground and the boundary of Parcel D and C in the background with the development, landscaping, wetlands, cottonwoods, and surface water below.





**Photo 13.** Looking south at the boundary of Parcel D and C, towards gardens and landscaping.



**Photo 14.** Gardens and shed/studio, looking southwest.



**Photo 15.** Lawns and greenhouse looking south towards the southern boundary of the Property.



**Photo 16.** Looking southeast at lawns and landscaping in the foreground and scrub-shrub wetlands in the background, on the southeast end of the Property.

**- ENVIRONMENTAL ANALYSIS -  
OF THE HALPIN PROPERTY,  
TETON COUNTY, WYOMING**

Prepared For

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**July 31, 2000**



# CONTENTS

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Executive Summary .....	iii
Introduction .....	1
Location .....	1
Physiography and Geology .....	1
Soils .....	3
Upland Soils.....	3
Wetland Soils.....	3
Climate.....	3
Surface Hydrology.....	4
Wetlands.....	4
Vegetative Covertypes .....	5
Xeric Grassland.....	7
Disturbed Grassland .....	7
Mesic Shrub .....	7
Tall Shrub .....	7
Xeric Shrub.....	8
Mesic Grassland.....	8
Scrub-shrub Wetland.....	8
Riverine Emergent Wetland (non-persistent) .....	8
Rocky Mountain Juniper/Limber Pine .....	8
Wildlife Species of Special Concern .....	9
Mule Deer .....	9
Elk .....	15
Other Wildlife Species .....	15
Recommendations .....	15
Natural Resource Overlay (NRO).....	15
Crucial Mule Deer Winter Range .....	16
Protected Watercourses and Wetlands .....	16
Development Suitability Recommendations .....	18
Other Recommendations for Future Development and Human Occupation.....	18
References .....	21

## FIGURES

---

Figure 1. Location and topography of the Halpin property, Teton County, Wyoming .....	2
Figure 2. Aerial photograph depicting vegetative covertypes on the Halpin property, Teton County, Wyoming .....	6
Figure 3. Aerial photograph depicting mule deer habitat and movement corridors on and in the vicinity of the Halpin property, Teton County, Wyoming. ....	10
Figure 4. Aerial photograph depicting mule deer locations observed during the winters of 1981-82 through 1991-92 on and in the vicinity of the Halpin property, Teton County, Wyoming.....	12
Figure 5. Aerial photograph depicting mule deer utilization as it relates to elevation zones on the Halpin property, Teton County, Wyoming.....	13
Figure 6. Aerial Photograph depicting the Teton County Natural Resource Overlay on and in the vicinity of the Halpin property, Teton County, Wyoming. ....	17
Figure 7. Aerial photograph depicting areas recommended as "most suitable, less suitable, and unsuitable" for development on the Halpin property, Teton County, Wyoming. ....	19

## TABLES

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Table 1. Acreages, percent occurrence, and Teton County habitat classification rank of vegetative covertypes found on the Halpin property .....	5
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## EXECUTIVE SUMMARY

An environmental analysis of the 32-acre Halpin property on East Gros Ventre Butte (EGVB), which consists of 2 adjacent parcels (one in the Town of Jackson and one in Teton County), was performed in June and July, 2000. The probable effects on wildlife "species of special concern" (SSCs) of developing one home site on each parcel were analyzed. Recommendations are provided that, to the maximum extent practicable, will reduce potential impacts while still allowing residential development on the property.

The Halpin property supports vegetative covertypes that provide habitat for a variety of animals. In particular, the entire property has been identified as crucial mule deer winter range and is included in Teton County's Natural Resource Overlay. Mule deer are primary users of the property during the winter and rely on its vegetation, topography, and snow-free areas for food, cover, and movement corridors. It is unknown if future development will increase disturbance to mule deer to any measurable degree. This will depend, in part, upon how much development occurs, where it is sited, how it is managed, and who it is occupied by.

Areas determined to be "most suitable" for development on the property are the xeric and disturbed grasslands in the middle elevation zone. Xeric and disturbed grasslands are the least valuable covertypes to wintering mule deer in terms of browse quantity and thermal cover, although they become increasingly important for movement corridors during severe winters because they occupy convex slopes that are generally blown free of snow. Recent analysis indicates mule deer utilization is the lowest in the middle elevation zone of the property compared to the upper and lower elevation zones. Areas considered "less suitable" for development are the mesic and xeric shrubland covertypes throughout the property due to the presence of preferred browse species for wintering mule deer. In addition, the entire lower and upper elevation zones are considered "less suitable" based on evidence of substantial mule deer usage.

A narrow riparian zone and small wetland are present on the portion of the parcel that abuts Flat Creek. Riparian and wetland boundaries were delineated and associated set-backs determined. Areas deemed "unsuitable for development" fall within these regulatory set-back zones.

Potential negative impacts to other SSCs resulting from future development are expected to be minimal. The absence of crucial winter range for ungulates other than mule deer insures that negative impacts to moose, elk, and bighorn sheep during critical winter periods will be minor or nonexistent. No active raptor nests will be affected by the proposed project and impacts to foraging habitat for bald eagles, peregrine falcons, and other raptors is expected to be non-existent or minor. The stretch of Flat Creek that parallels the property does not represent crucial habitat for trumpeter swans, great blue herons, river otters, or Snake River fine-spotted cutthroat trout.

Employing some common sense measures following development and human occupation of the residence(s) will go far to protect continued wildlife use of this property and its vicinity. Specifically, minimizing human-caused disturbances to wintering wildlife, not inhibiting wildlife movements by erecting impassable fences, controlling pets, and not intentionally feeding wildlife are effective measures for maintaining the significant wildlife value of the property.

**- ENVIRONMENTAL ANALYSIS -**  
**OF THE HALPIN PROPERTY,**  
**TETON COUNTY, WYOMING**

**INTRODUCTION**

An environmental analysis (EA) of 2 adjacent parcels totaling 32 acres on East Gros Ventre Butte (EGVB) above the town of Jackson was performed in June and July, 2000. Mr. Michael Halpin, owner of the property, requested the study which is required by the Teton County Planning Department in order to identify the natural biological attributes of the property and the surrounding area. Teton County imposes this requirement because the property is located within the Natural Resource Overlay (NRO). Of particular concern to the County are the wildlife "species of special concern" (SSCs) identified in the 1994 Jackson-Teton County Comprehensive Plan (The Plan). A second objective of this study was to, in general terms, recommend areas on the property where the development of 2 home sites (one on each parcel) might occur while minimizing negative impacts to SSCs.

**LOCATION**

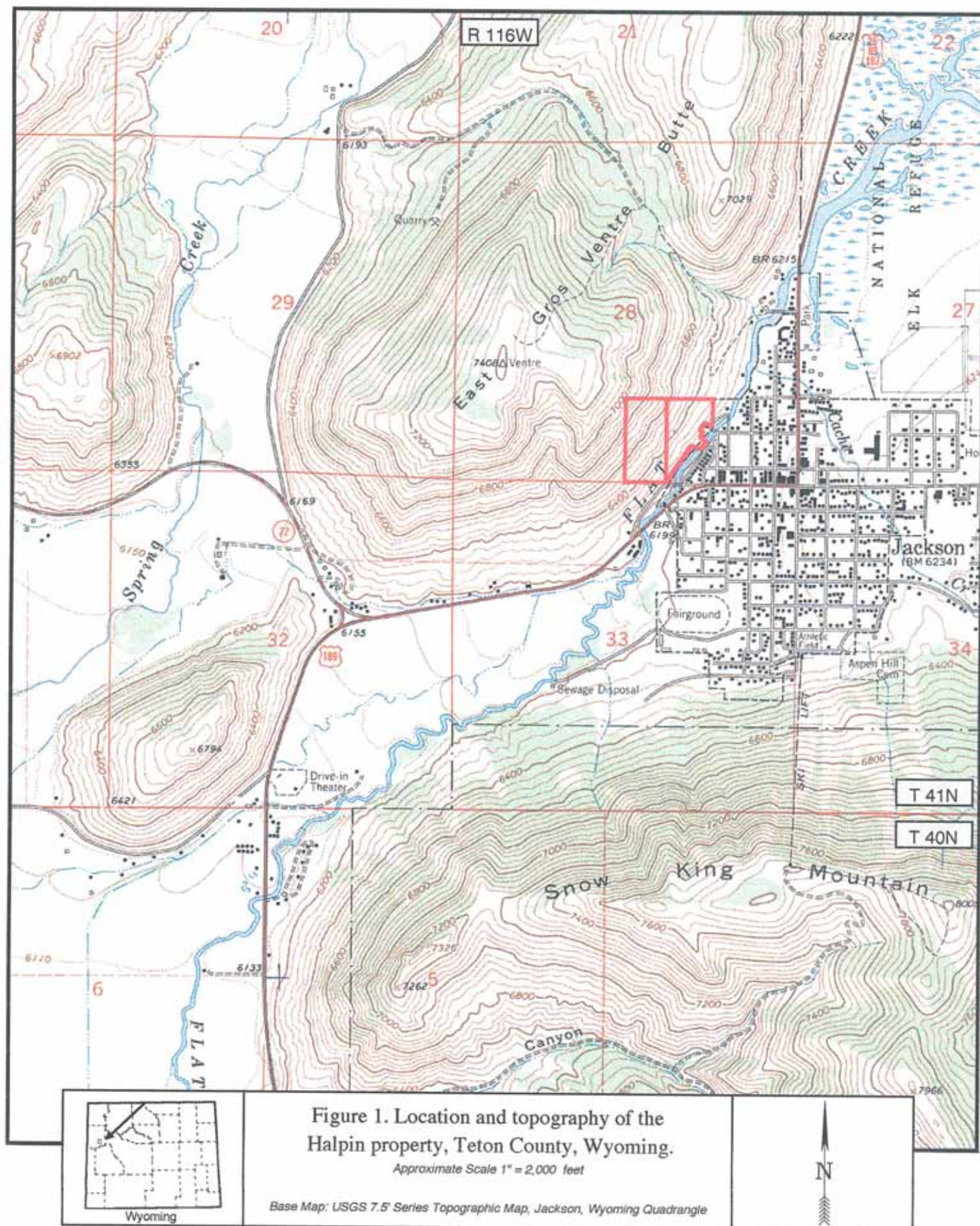
The 2 parcels that make up the Halpin property are located on the southeastern corner of EGVB in Teton County, Wyoming (T41N R 116W S28; Fig. 1). The eastern parcel (12 acres) is located within the Town of Jackson and the western parcel (20 acres) falls within jurisdiction of Teton County. Access to the property is gained by traveling north on North Millward Street to Saddle Butte Drive then proceeding 1/4 mile to the northern property boundary which is located 30 m south of the second switchback.

**PHYSIOGRAPHY AND GEOLOGY**

EGVB is a steep linear butte that encompasses an area of approximately 1600 ha (4,000 acres). The majority of the butte consists of stable and unstable talus slopes, steep bedrock outcrops, and low gradient uplands. The Halpin property is dominated by talus slopes and bedrock outcrops with a small amount of nearly level topography adjacent to Flat Creek. The elevation of EGVB ranges from 6,200-7,400 ft and the range of elevation on the property is 6,200-6,930 ft. Slopes on the property range from 0-70% and the aspect is generally southeast throughout.

EGVB is made up of a variety of sedimentary rocks formed in ancient inland seas that advanced and receded in this region throughout the Paleozoic Era (200-500 million years ago). While most of the sedimentary bedrock in Jackson Hole was covered with glacial till and out-wash following a series of glacial periods beginning 200,000 years ago, ancient sedimentary rocks are exposed







on the steep buttes and mountain ranges in and around the valley. The dominant bedrock formation on the Halpin property is Bighorn dolomite, a calcareous rock formed during the Ordovician Period (450,000 years ago). Darby formation dolomitic siltstone and shale are also present.

## SOILS

### UPLAND SOILS

Two soil complexes dominate the project area. The Cryorthent-Cryoboroll Complex soils are those which formed in alluvium, colluvium, and residuum of sedimentary rock on south and west facing slopes with a 60 and 90% gradient. They are stony or gravelly soils that are deep and well drained. The water holding capacity of these soils is moderate, surface runoff is rapid, and erosion potential is high. Vegetation associated with this soil type consists primarily of sagebrush grasslands. Weed and annual forbs become more abundant as range conditions diminish.

The other soil complex, Grobutte-Thayne Gravelly Loams, are also found on steep south and west facing slopes (30-60%). The Grobutte soils formed in colluvium and alluvium on direct south and west-facing exposures and have rapid surface water runoff and erosion. The Thayne soils formed in gravelly alluvium along draws and in notches. The vegetation supported by these 2 soil types differs slightly. Sagebrush dominates most Grobutte soils, while antelope bitterbrush is more common on Thayne soils.

Other upland soils that may be found in the project area in small pockets include Starley, Starman, Crow Creek, and bedrock outcrops. A large Bighorn dolomite outcrop is present in the northeastern corner of the county parcel. Smaller rock outcrops and large boulders can also be found throughout the project area.

### WETLAND SOILS

Soils along Flat Creek are classified as Grobutte-Thayne gravelly loams and typically do not include wetland soils. However, wetlands were present along the stream and soils within those areas possess a dark (10YR 2/1 to 10YR 3/2) silt loam surface horizon with redoximorphic features at a depth of 6 inches, indicating seasonal soil saturation at that depth.

## CLIMATE

Typical of most northern Rocky Mountain valleys, Jackson Hole is characterized by long, cold winters with deep snow accumulations and short cool summers, resulting in a relatively short growing season. Temperatures range from summer highs of 80 - 90°F to winter lows of negative 30° F. In contrast to the widely ranging seasonal temperatures, precipitation levels remain relatively steady throughout the year, with an average annual accumulation of 15.2 inches. Average monthly precipitation levels are between 1 and 2 inches, with May and December being the wettest and July and February the driest. Jackson Hole averages 90 inches of snowfall per year, which accounts for 60% of the annual precipitation. Prevailing winds in the valley are from the southwest.

EGVB has a unique microclimatic regime that enhances the value of the butte for wintering wildlife. Temperature inversions are common in Jackson Hole in the winter with dense cool air settling down into the valley floor and air warmed from thermal radiation rising up to higher elevations. Thus, deer and other wildlife wintering on top of EGVB can often escape the coldest winter temperatures. In addition, winds out of the southwest blow snow off the steep exposed slopes of EGVB providing mule deer and other wildlife species that are not adapted to deep snow conditions with important movement corridors. Direct sunlight reaching the south-facing slopes of the Halpin Property augments both warmer temperatures and snowmelt.

## **SURFACE HYDROLOGY**

The only surface hydrologic feature found within the project area is Flat Creek. The property abuts Flat Creek in 2 different places along the eastern boundary and has about 311 ft of direct creek-front property. Flat Creek, a tributary of the Snake River, originates in the Gros Ventre Mountains east of the National Elk Refuge. It has a total drainage area of approximately 120 square miles. Flows in Flat Creek vary seasonally based on runoff, irrigation input, water diversions from both the Gros Ventre River and Flat Creek, and losses due to infiltration. Flat Creek is classified as a Class 3 fishery by the Wyoming Game and Fish Department (WGFD). Although historically important as a spawning stream to Snake River cutthroat trout, its function appears to have diminished in recent years.

Flat Creek is a protected watercourse as specified in the Jackson-Teton County Comprehensive Plan and Land Use Regulations (1994) since its mean annual flow exceeds 3 cubic feet per second. As such, a minimum setback of 50-feet and maximum setback of 150-feet from the ordinary high water mark or top of bank is required. The specific width is dictated by the presence or absence of riparian plant communities.

There are several topographic swales on the property that are oriented in a northwest to southeast direction. These swales trap and accumulate wind-blown snow in the winter and function as ephemeral drainages in the spring. They tend to have greater overall stability and finer textured soils. These swales are an extremely important component of the soil/moisture/vegetation regime in the project area since they support a greater diversity and density of shrubs that are important sources of food for wildlife in winter.

## **WETLANDS**

The impacts of human activities on Rocky Mountain wetlands are numerous and long lasting. Development and associated human activities (e.g. draining, dredging, and filling) appear to be the primary sources of adverse impacts to wetlands. Residential developments are often concentrated along watercourses and associated wetland and riparian zones sustain the greatest cumulative wetland habitat modification and losses. Although few of these development projects affect large acreages on any given watershed, the cumulative effect of many small wetland habitat modifications is a primary concern.

Because wetlands perform functions that are of value to society at large and because of the tremendous threats to wetland resources, the federal government has enacted the Clean Water

Act (CWA) which affords protection to wetlands. Specifically, Section 404 of this act, as amended, prohibits disposal of fill material into wetlands. Other regulated activities in wetlands may include ditching, draining, excavation, flooding, and mechanized clearing. Protection under the Clean Water Act is given only to areas that meet certain wetland definitional criteria as stated in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987). Wetlands are defined as areas that are wet for a duration adequate to support and, under normal circumstances, do support wetland vegetation. The presence of definitional wetlands is determined by examining 3 wetland parameters (vegetation, soils, and hydrology).

Although no wetlands were identified on the Halpin property by the National Wetlands Inventory map, small wetland areas associated with Flat Creek were observed. Wetland types were identified as palustrine scrub-shrub and riverine emergent (non-persistent) wetlands, as described by Cowardin et al. (1979). A routine wetland delineation was performed in the scrub-shrub wetland along Flat Creek. Two sample points were placed along a single transect which was oriented perpendicular to the flow of the creek. Wetland community boundaries were identified and delineated. Results are depicted in the vegetative coertype map (Fig. 2).

### VEGETATIVE COERTYPES

A total of 8 different vegetative coertypes defined by the Jackson-Teton County Comprehensive Plan (1994) were identified on the Halpin property (Fig. 2). The Plan ranked the relative values of vegetative coertypes to wildlife by assigning ordinal values ranging from 0 (lowest value) to 10 (highest value). Criteria used by Teton County to determine relative habitat values were developed by Minta and Campbell (1991) and included wildlife species diversity, abundance and distribution of habitats, wildlife species using given habitats, and the degree of alteration associated with the habitats. Acreages, relative areas, and relative habitat values of each coertype are summarized in Table 1.

Table 1. Acreages, percent occurrence, and Teton County habitat classification rank of vegetative coertypes found on the Halpin property.

Vegetative Coertype	Acreage	Tract %	Ranking
Xeric grassland	17.87	56.1%	1
Disturbed grassland	4.44	13.9%	1
Mesic shrub	4.58	14.3%	5
Xeric shrub	4.50	14.1%	3
Tall shrub	0.20	0.6%	8
Mesic grassland	0.16	0.5%	3
Scrub-shrub wetland	0.08	0.3%	9
Emergent wetland (non-persistent)	0.05	0.2%	1
<b>Totals</b>	<b>31.88</b>	<b>100.0</b>	

The topography and geology associated with the steep, southeast-facing slopes that dominate the project area prohibit moisture retention in the soil except in linear swales and small wetlands adjacent to the creek; thus, plant communities consist primarily of xeric grasslands and sage-



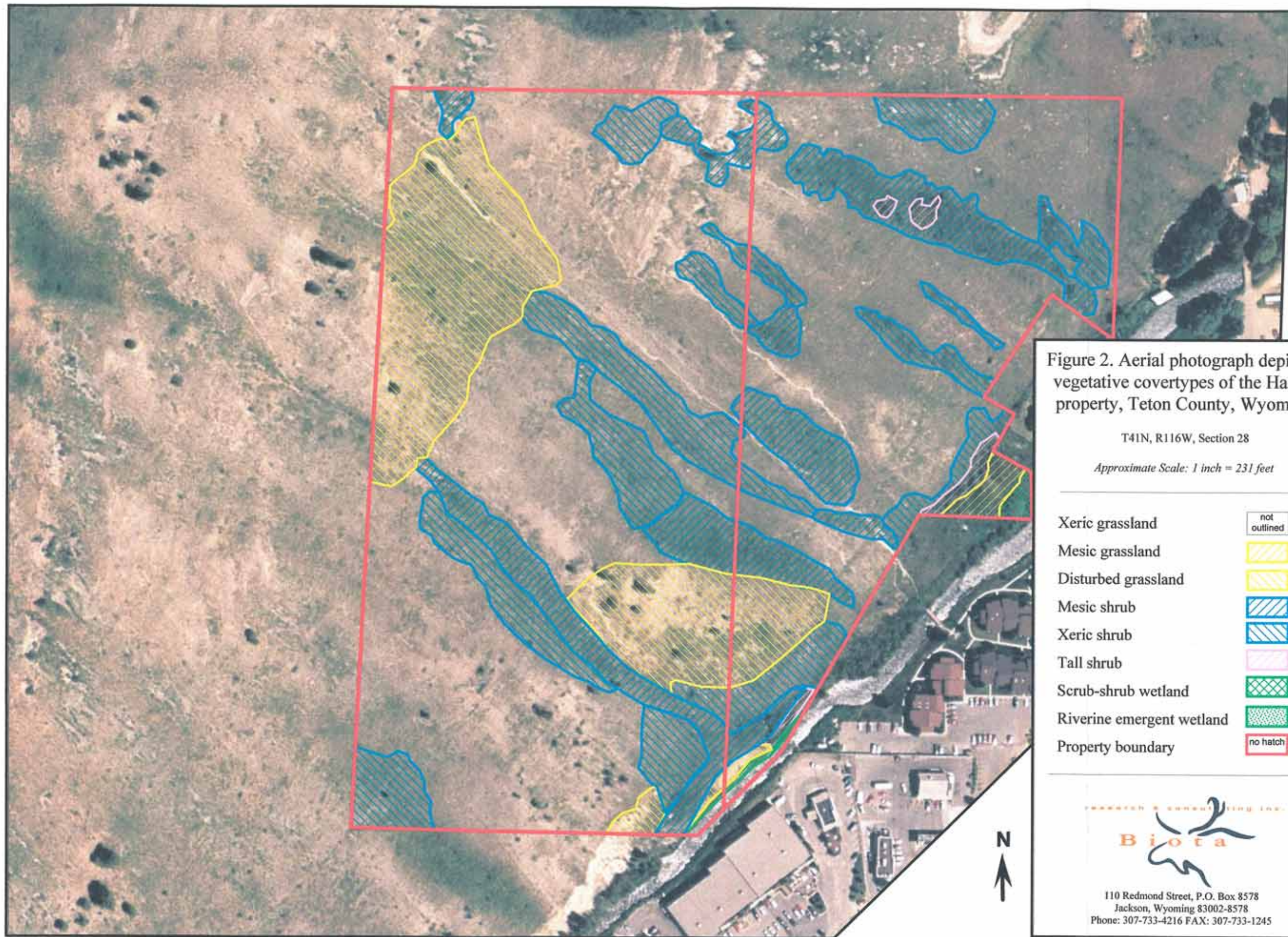


Figure 2. Aerial photograph depicting vegetative covertypes of the Halpin property, Teton County, Wyoming.

T41N, R116W, Section 28

Approximate Scale: 1 inch = 231 feet

Xeric grassland	not outlined
Mesic grassland	
Disturbed grassland	
Mesic shrub	
Xeric shrub	
Tall shrub	
Scrub-shrub wetland	
Riverine emergent wetland	
Property boundary	no hatch

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brush dominated shrublands. Limber pine and juniper trees are also found widely scattered throughout the property.

### **XERIC GRASSLAND**

Xeric grasslands have a perennial grass and forb ground cover of 50% or less with vegetative cover lacking in many places. Xeric grasslands dominate the Halpin property, accounting for about 56% of the total area. They are located on steep, convex, south-facing slopes with well drained soils, making moisture a major limiting factor to plant growth. In addition, southern winds hasten evaporation throughout the year and blow snow off the slopes in the winter, removing a substantial source of potential moisture in the spring. Bluebunch wheatgrass (*Agropyron spicatum*) is the dominant species in this covertype and is consistent throughout the project area in all covertypes. Arrowleaf balsamroot (*Balsamorhiza sagitta*) is commonly associated with bluebunch wheatgrass and occasional shrubs and sub-shrubs include big sagebrush (*Artemesia tridentata*), fringed sagebrush (*A. fridida*), long-leafed sagebrush (*A. longifolia*), green rabbitbrush (*Chrysothamnus viscidiflorus*), and gray rabbitbrush (*C. nauseosus*). Total vegetative cover in the xeric grasslands on the property varies from 15–40%.

### **DISTURBED GRASSLAND**

Disturbed grasslands have a history of natural and/or human-caused disturbance and a vegetative component consisting of perennial grasses and weedy forbs. Two large swaths of disturbed grassland are located in the tract on steep talus slopes where rock slides are common. Because of this instability, complete establishment of the xeric grassland and/or shrub covertypes is delayed or prevented. Although bluebunch wheatgrass and other plants common to xeric grasslands can be found in this covertype, weedy, non-native forbs, including butter-and-eggs (*Linaria vulgaris*) and yellow sweet-clover (*Melilotus officinalis*), currently dominate these sites. Bank erosion on Flat creek has also created unstable conditions where the disturbed grassland covertype is becoming established.

### **MESIC SHRUB**

The mesic shrub covertype is found in the project area on concave slopes where wind-blown snow is deposited in winter. These areas are at least partially protected from desiccating winds and ungulate browse during some winters and they receive moisture in the form of snowmelt in the spring. In addition, they have relatively deep and stable soils with at least some fine-textured particles, providing enhanced nutrient availability. Shrubs account for over 50% of the total vegetative cover and have average heights of 1.5-3.0 ft. Mesic shrub species include big sagebrush, antelope bitterbrush (*Purshia tridentata*), serviceberry (*Amelanchier alnifolia*), chokecherry (*Prunus virginiana*), and mountain snowberry (*Symphoricarpos oreophilus*). Bluebunch wheatgrass, giant wild rye (*Elymus cinerus*), and other grasses, forbs, and sub-shrubs are also present in this covertype. Mesic shrub covertypes contain important browse species for wintering mule deer.

### **TALL SHRUB**

Small, isolated clumps of the tall shrub covertype can be found on the property within larger patches of mesic shrublands and where the topography flattens near Flat Creek. Tall shrub

covertypes have at least a 25% canopy cover consisting of chokecherry, serviceberry, and/or mountain snowberry over 5 ft. tall. Although these 3 shrub species occur together in swales throughout the parcel, there are few places where they reach this height and density due to environmental constraints such as intensive browsing. This covertype is becoming increasingly common in the large swale in the northern portion of the town parcel where minimal browsing pressure in the last few years has apparently allowed formerly suppressed shrubs to obtain more natural heights.

### **XERIC SHRUB**

Xeric shrub covertypes are dominated by widely spaced low shrubs interspersed with sub-shrubs and grasses; all are drought resistant. Xeric shrublands are found in small patches and in the transition zones between xeric grassland and mesic shrub sites. The dominant shrubs in this covertype are big sagebrush, gray and green rabbitbrush, and antelope bitterbrush, although mountain snowberry, serviceberry, chokecherry, and Rocky mountain juniper (*Juniperus scopulorum*) are occasionally present. Bluebunch wheatgrass, forbs, and a variety of sub-shrubs are also present. Substantial mule deer browse on antelope bitterbrush and serviceberry is evident in this covertype throughout the property especially in areas traversed by game trails.

### **MESIC GRASSLAND**

Mesic grasslands are sites with a perennial grass and forb ground cover of greater than 50%. A small mesic grassland can be found in the flat area between the scrub-shrub wetland associated with Flat Creek and a tall shrub community at the base of the slope. Total vegetative cover is about 90% and is dominated by grasses, the most common species being smooth brome (*Bromus inermis*)

### **SCRUB-SHRUB WETLAND**

Scrub-shrub wetlands are present on the Halpin property along Flat Creek. Willows (*Salix spp.*) make up the entirety of the shrub-stratum of these wetlands. Kentucky bluegrass (*Poa pratensis*), redtop (*Agrostis stolonifera*), and mountain forget-me-not (*Myosotis scorpioides*) are the dominant species in the herbaceous stratum. Scrub-shrub wetlands are one of the most valuable vegetative covertypes occurring in Teton County since they provide important foraging and movement habitat for wildlife.

### **RIVERINE EMERGENT WETLAND (NON-PERSISTENT)**

A very narrow band of emergent wetland grass and sedge species can be found below the eroded bank on the southern portion of the property along Flat Creek. This wetland fringe is not likely to persist due to the instability of the soil in the area and imminent creek channel changes.

### **ROCKY MOUNTAIN JUNIPER/LIMBER PINE**

Rocky Mountain juniper (*Juniperus scopulorum*) can be found scattered throughout the project area but is not a major component of any of the vegetative covertypes present. None the less, juniper berries and cones are an important source of food for wildlife, and their canopies provide thermal cover as well as shade to wildlife utilizing the area. Although limber pine (*Pinus flexilis*)

is generally restricted to rock outcrops on the property, these trees can also provide thermal cover to wildlife and their seeds are an important source of protein for many birds and small mammals.

## **WILDLIFE SPECIES OF SPECIAL CONCERN**

Vegetative communities found on the Halpin property represent habitat for a variety of birds and mammals, some of which have been classified as wildlife species of special concern (SSCs) in the Jackson-Teton County Comprehensive Plan and Land Use Regulations (1994). Minta and Campbell (1991) define SSCs as:

“Wildlife species which have been afforded special management status on a federal and/or state level. Some of these species have been listed or are being considered for listing by the USFWS as threatened or endangered. Other species have been classified by State wildlife agencies as Priority Nongame species or are species which are of special concern to Teton County due to their abundance, habitat requirements, and vulnerability or intolerance to human disturbance. Big game mammals are considered SSCs because of their biological, aesthetic, and economic values, their reliance on private lands for habitat (especially during the winter), and the large state and federal effort committed to managing these species. One final criteria used to select SSCs was their reliance on or occupation of habitat which occurs on or near private land that might be developed.”

The list of SSCs in Teton County as identified by Minta and Campbell (1991) follows:

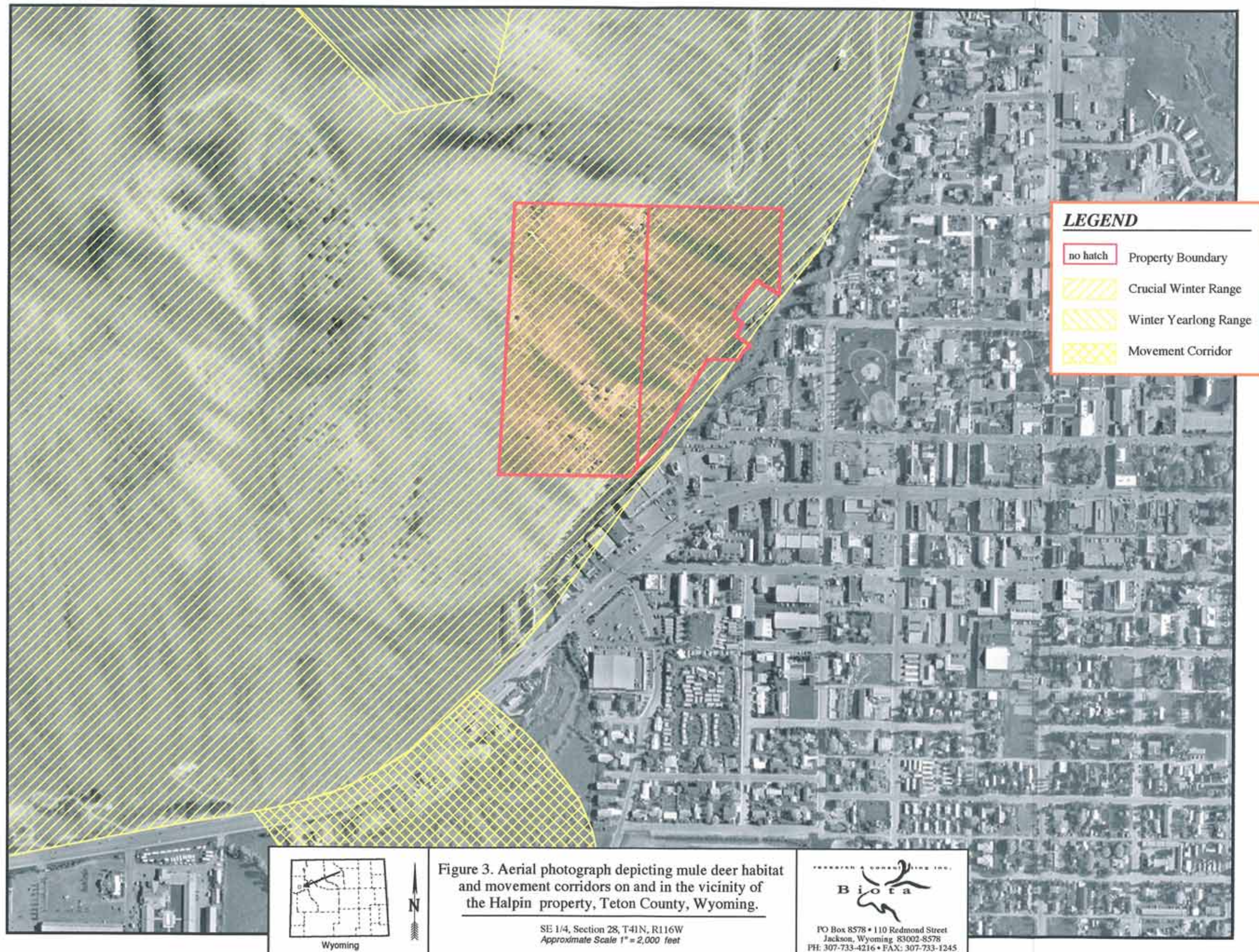
Bald eagle	Endangered
Peregrine falcon	Endangered
Trumpeter swan	Priority 1 Nongame
Snake River cutthroat trout	Special Concern
Mule deer	Big Game Mgmt.
River otter	Priority 3 Nongame
Great Blue heron	Special Concern
Raptors (shrub-grassland & forest)	Special Concern
Moose	Big Game Mgmt.
Bighorn sheep	Big Game Mgmt.
Elk	Big Game Mgmt.
Pronghorn Antelope	Big Game Mgmt.
Bison	Big Game Mgmt.

Wildlife species of special concern which are or might be present within the project area are discussed below.

### **MULE DEER**

The entire Halpin project area has been classified as crucial mule deer winter range by the Wyoming Game and Fish Department (Fig. 3). Crucial winter range means that these areas are vital to the survival of animals during the critical periods of winter. Animals will find food and/or cover here during the most inclement and difficult winter weather conditions due to the physiographic and vegetative characteristics. The wind-swept, south-facing slopes of EGVB provide a snow free area for movement as well as winter browse, thermal cover, and warmer temperatures. Variable environmental conditions, forage opportunities, and human-related disturbances are thought to influence the frequency and distribution of mule deer on EGVB in the winter. In addition, artificial feeding of deer (both intentional and unintentional) in the town of Jackson and elsewhere in Teton County has almost certainly altered traditional mule deer occupation and movement patterns on EGVB.







In-depth winter mule deer habitat utilization and distribution data was collected by Biota Research and Consulting, Inc. (BRCI) on East and West Gros Ventre Buttes from 1981-92. For the winters of 1981-82 to 1989-90, mule deer surveys were conducted once a week from the time deer migrated onto the butte in the fall until the time they left in the spring (November– April). For the winters of 1990-91 and 1991-92, only 4 counts were conducted during each winter. Results show mule deer using portions of the Halpin property and immediate vicinity every winter during the study. However, intensity of use is quite variable depending on the specific location and year. In general, the most frequently and consistently utilized area on the property was the northwest quarter of the Teton County parcel and the slopes above it (Fig. 4). These are sparsely vegetated, wind-swept slopes that provide a snow-free movement zone, limited forage opportunities, and easy access to aspen and conifer stands to the north.

Another location where deer were observed frequently was the northeast quarter of the town parcel and area adjacent to the eastern boundary (Fig. 4). Unnaturally high concentrations of mule deer were observed here several times during the winter of 1988-89 and can be attributed to consistent artificial feeding on the Krandenberg property throughout that winter (Fig. 4). Groups of over 50 animals were not uncommon and 25% of all the deer observed (out of a total of 350) on the Gros Ventre Buttes winter range that winter were found at or near this feedground. Artificial feeding at the Krandenberg site began in the late 1970's and continued most winters until 1996. Additional observations of deer utilizing the feedground area and the small bench to the northwest of it on the Halpin property were made by BRCI during the winters of 82-83, 85-86, 86-87, 87-88, 89-90. The largest group of deer recorded during these winters was a group of 38 in 1986-87; not including this group of 38, the average group size was 7.

According to a more recent deer browse and pellet group analysis conducted by BRCI on the Halpin property on June 29<sup>th</sup> and 30<sup>th</sup>, deer utilization of the property is generally concentrated in the lower and upper-most elevation zones with less intense use in the middle elevation zone. The highest concentrations of game trails, pellet groups, and heavily browsed shrubs were found between 6,220–6,365 ft (Fig. 5). Most of the serviceberry shrubs found along game trails in this area have severely stunted growth forms due to intensive deer browsing activity. In addition, antelope bitterbrush tends to be very low and intensively browsed. Although feeding at the Krandenberg site was terminated in 1996, feeding still occurs at the Wilcox Gallery, local hotels, and in residential neighborhoods, enhancing the attractiveness of the lower slopes of the butte to deer and perpetuating the habituation of the herd to artificial feeding. As such, preferred shrubs along deer trails between feedgrounds and town receive increased frequency and intensity of browse. It is also possible that mule deer using the Krandenberg site when operational continue to frequent the area as a result of conditioned and learned behaviors.

The deer browse and pellet group survey also provided evidence that, despite a lower concentration of preferred browse species, deer extensively utilize the steep upper slopes (6540–6930 ft) in the northwest corner of the Halpin property (Fig. 5). Antelope bitterbrush is moderately to heavily browsed, game trails are common, and pellet groups are abundant. Favorable environmental conditions as well as proximity to aspen and conifer stands, the top of the butte, and other areas heavily and consistently used by mule deer in winter results in deer occupying this area more than elsewhere on the parcel.



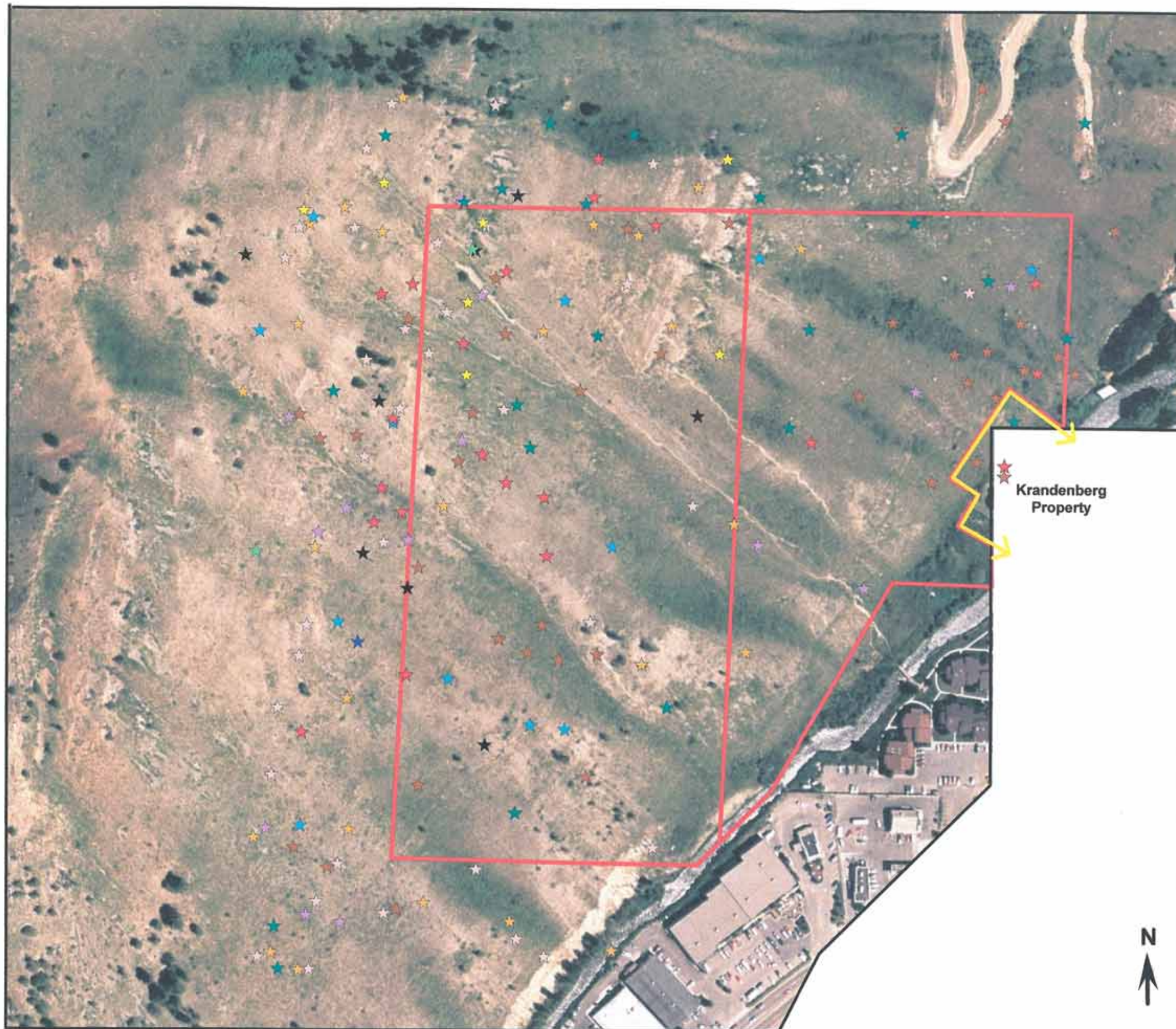


Figure 4. Aerial photograph depicting mule deer locations observed during the winters of 1981-82 through 1991-92 on and in the vicinity of the Halpin property, Teton County, Wyoming.

T41N, R116W, Section 28

Approximate Scale: 1 inch = 288 feet

<u>Year</u>	<u>Total # deer observed</u>	<u>Locations</u>
1981-82	33	★
1982-83	241	☆
1983-84	92	★
1984-85	27	★
1985-86	53	★
1986-87	111	★
1987-88	115	★
1988-89	1,311	★
1989-90	184	★
1990-91	13	★
1991-92	7	★

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Figure 5. Aerial photograph depicting mule deer utilization as it relates to elevation zones on the Halpin property, Teton County, Wyoming.

T41N, R116W, Section 28

Approximate Scale: 1 inch = 220 feet

- |                                                                             |                                                                                       |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Low elevation zone (6,205 - 6,365 ft)<br>Moderate to high mule deer usage   |  |
| Middle elevation zone (6,365 - 6,540 ft)<br>Low to moderate mule deer usage |  |
| High elevation zone (6,540 - 6,930 ft)<br>Moderate to high mule deer usage  |  |

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Anecdotal information from neighbors living along Flat Creek below the Halpin property indicates that individuals and small groups of mule deer use the Krandenberg's bridge to cross Flat Creek and access the adjacent residential neighborhood where they browse ornamental shrubs and accept handouts from residents and tourists. It is suspected that a more consistent deer feeding program is occurring somewhere in the neighborhood but no confirmation of this was obtained. Additionally, small groups of deer (1-4) have been observed utilizing the lower slopes of the Halpin parcel in recent winters, but the large numbers of deer that used to congregate here are no longer seen.

Impacts - Adverse impacts to mule deer habitat can be expected as a result of constructing home sites on both the town and county parcels of the Halpin property. Depending on the size and location of the houses and access roads, a direct loss of an unknown amount of crucial mule deer winter range will occur. Availability of important winter browse shrubs (serviceberry, antelope bitterbrush, and sagebrush) will likely be diminished and widely scattered Rocky Mountain juniper and limber pine trees could be destroyed, removing thermal cover options for deer utilizing the area.

Potential disturbances to mule deer that are associated with human occupation of crucial winter range include direct losses of individuals to vehicular accidents and domestic pet incidents and indirect losses due to increased stress and energy-use related to human and domestic pet use of the area. Ultimately, increased levels of human presence on the property, although admittedly difficult to predict, could diminish the attractiveness of this area to mule deer or alter their use patterns. This can lead to greater than normal concentrations of deer on specific more secure areas during the winter and increase intraspecific competition for food. It may also lead to the use of more marginal habitat. However, complete abandonment of the parcel by deer is unlikely because of their ability to tolerate and adapt to human presence.

It is well documented that wintering deer can and do adapt to the presence of humans posing no security threat. This has been observed in a variety of locations around the country where developments have occurred on or around deer habitat. However, development density can influence winter movements, activity patterns, changes in numbers, and the distribution of deer. One study in Montana showed that as the number of houses per square mile increased from 1 to 2, the number of observed deer dropped 63%, whereas a change from 10 to 11 houses per square mile resulted in a drop of only 6%. Thus, low housing density has a pronounced effect on the number of deer using an area, while the marginal effects of adding houses contributes disproportionately less impact on the number of deer likely to be observed in the area.

Mule deer movements on EGVB and migration to and from the butte are greatly influenced by topography as well as weather, environmental conditions, disturbances (e.g., hunting, vehicles), barriers (e.g., fences, houses), and other factors. However, the specific routes and exact timing of any year's migration is determined more by random or unpredictable variables, such as winter severity, exact forage conditions, and transient human disturbances. In effect, these often short-term variables fine-tune the annual migration. Once a disturbance such as a home site has been built and is a predictable part of the migratory environment, deer will habituate to it with an adaptive level of attraction or avoidance.

The intentional feeding of mule deer by private individuals is an activity the Wyoming Game and Fish Department does not support, although no laws currently exist to prohibit feeding. Many people participate in the activity either because they think wildlife will not survive without their "help" or they simply want to view them out their windows. The temptation to feed wintering mule deer will likely be high for people occupying residences on the Halpin property since most people do not like to witness the natural process of death that often occurs on ungulate winter ranges. However, there are real problems associated with feeding deer and other ungulates including promoting disease transmittal, facilitating over-browsing of native forage, increasing the dependence of ungulates on humans for food, encouraging damage to landscaped yards, augmenting wildlife related car accidents, and increasing potential danger to humans.

## **ELK**

The Halpin parcel is unclassified as elk habitat by the Wyoming Game and Fish Department; however, winter elk use on EGVB appears to be increasing. Small groups of elk (less than 30 animals per group) have been observed in and around Saddle Butte in recent years. The sagebrush and tall shrub covertypes on the Halpin property offer limited potential foraging opportunities to elk in winter.

Impacts – The absence of crucial elk winter range on this parcel and the proximity to the National Elk Refuge insures that negative impacts to elk associated with future development, if any, will be minimal.

## **OTHER WILDLIFE SPECIES**

A variety of other wildlife species use the property to unknown degrees. The most common mammals are rodents (including voles, cricetids, marmots, ground squirrels, pocket gophers), shrews, badgers, and weasels. Avifauna found on the parcel include red-tailed hawks, rough-legged hawks, Swainson's hawks, kestrels, sparrows, magpies, ravens, green-tailed towhees, and a variety of other resident and migratory songbirds.

Impacts - Future development will have direct negative effects on some of the rodents, badgers, and ground nesting birds and, as a result, will negatively affect the predators using them as prey. The small size of the area proposed for development, the large acreage of surrounding undeveloped land, and the widespread and abundant distribution of these common wildlife species in Jackson Hole insure that these impacts will be minimal.

## **RECOMMENDATIONS**

### **NATURAL RESOURCE OVERLAY (NRO)**

Teton County's NRO represents a combination of important wildlife habitats throughout the county and was established in the Jackson-Teton County Comprehensive Plan and Land Use Regulations (1994) as a planning and development tool. Included in the overlay are: crucial winter range and migration routes/corridors for elk, moose, mule deer, and bighorn sheep; nesting and foraging areas for bald eagles and peregrine falcons; nesting and wintering areas for trumpeter swans; and spawning areas for Snake River fine-spotted cutthroat trout. The Halpin parcel that outside of the city limits for the town of Jackson but within Teton County is presently

mapped within the NRO primarily because of its high value as crucial mule deer winter range (Fig. 6). The NRO, as it is currently mapped, is considered accurate in the vicinity of the Halpin property.

Development occurring on properties which fall partially or entirely within the NRO is required to be located, if possible, outside crucial wildlife habitat areas or to minimize impacts to resident species and their habitats to the greatest extent practicable (Section 3270 of Article III and subsection 3270.H). Because the entire property is located within designated crucial habitat for mule deer, future development on the property should be sited and designed so as to create the least disturbance to this species and its habitat.

### **CRUCIAL MULE DEER WINTER RANGE**

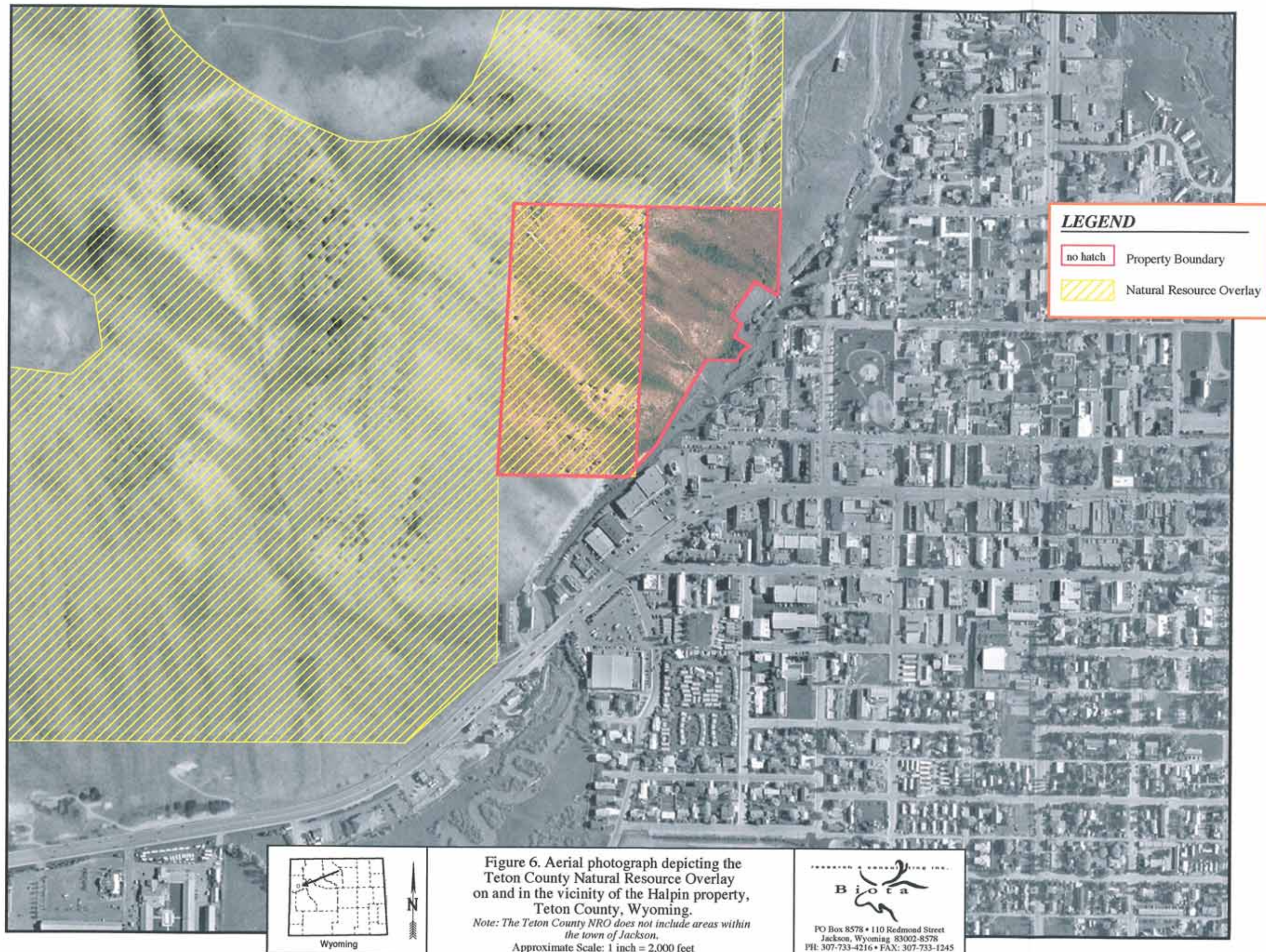
Certain measures can be taken to minimize impacts to wintering mule deer resulting from future development occurring on the Halpin property. Ideally, development should be confined to the least valuable and most infrequently utilized portions of the property. The xeric and disturbed grassland covertypes are the least valuable to mule deer because they lack both preferred winter browse shrubs and thermal cover. More specifically, xeric and disturbed grasslands in the middle elevation slopes (6,365-6,540 ft) of the parcel show the least evidence of recent deer utilization in the form of browse intensity and pellet groups presence, although game trails do traverse these slopes.

In contrast, the most valuable portions of the property for mule deer in winter include the linear mesic shrub swales and adjacent xeric shrublands which provide substantial winter browse opportunities. These areas have been heavily utilized by deer both recently and historically, especially in the lower and upper elevation zones. In addition, the entire lower (6,205-6,365 ft) and upper elevation (6,540-6,930 ft) slopes show substantial evidence of recent utilization as movement corridors and resting areas. The upper slopes are also likely used by mule deer as escape terrain from predators and the cold valley temperatures during inversions. Building in these areas should be avoided if at all possible and, if not, physical impacts to soil and vegetation in them should be minimized to the maximum extent possible.

### **PROTECTED WATERCOURSES AND WETLANDS**

Watercourses flowing at a mean annual rate of 3 cubic feet per second (cfs) or more are considered "protected watercourses" by Teton County and have been given a variable setback between 50 and 150 feet based on the presence or absence of associated riparian and/or wetland plant communities. Flows in Flat Creek meet this criterion and wetland and riparian plant communities generally fall within the minimum 50-foot setback. However, the mesic grassland on the Halpin property (Fig. 3) is considered a riparian-influenced plant community that extends beyond the 50-foot setback from Flat Creek. Thus, areas within this vegetative covertype are considered "unsuitable for development" (see below and Fig. 7).







## DEVELOPMENT SUITABILITY RECOMMENDATIONS

Information gathered during the EA process was used to create a set of recommendations regarding where development might be sited on the property and still minimize real and potential impacts to wintering mule deer and their habitat. These recommendations identify areas which, based on information gathered during BRCI's mule deer winter range study, recent browse and pellet group analysis, and anecdotal information are believed to be "unsuitable" for development, "less suitable" for development, and "most suitable" for development (Fig. 7). Such designations are made as follows:

Areas "Unsuitable" for Development - All areas that include protected natural resources (i.e., watercourses and wetlands) or fall within the protective setbacks of these resources as identified in the Jackson-Teton County Comprehensive Plan are considered "unsuitable" for development.

Areas "Less Suitable" for Development - It is the intent of the Jackson-Teton County Comprehensive Plan to minimize adverse development impacts to important features for SSCs. "Less suitable" areas do not encompass protected natural resources or their setbacks but, relative to remaining areas on the subject property, are more important to SSCs. All areas that contain vegetative cover types and other habitat components that are important to wintering mule deer and/or evidence of extensive recent and/or historic use by mule deer are considered "less suitable" for development.

Areas "Most Suitable" for Development - All areas, relative to other areas on the subject property, within which development would cause the least adverse impact to habitats of SSCs or other protected natural resources, are considered "most suitable" for development. Xeric and disturbed grasslands that are found in the elevation zone that is least heavily utilized by mule deer on the Halpin property are considered "most suitable" for development.

## OTHER RECOMMENDATIONS FOR FUTURE DEVELOPMENT AND HUMAN OCCUPATION

The "most suitable" portions of the Halpin property for development are located in the middle elevation xeric and disturbed grasslands that receive low to moderate use by mule deer (Fig. 7). However, within this category of "most suitable" sites, disturbance related to driveway construction must also be weighed. Details related to the construction of roads and driveways to access various home sites on this property have not yet been determined. Assuming that access to the property will be from Saddle Butte Drive, the farther the home site is from this road, the more disturbance will occur to crucial mule deer winter range, and the greater the overall impact of the whole project. In fact, impacts associated with road construction to the county parcel could be substantial enough as to render a "more suitable" site "less suitable" since a substantial amount of valuable winter range would likely be traversed and consistent use by residents would likely disrupt deer movement and habitat utilization.

A unique approach to diminishing the impact to mule deer and reducing the potential visual impacts of another house on the EGVB has been suggested by the landowner. By placing a home directly on bedrock 12 – 24 feet under the current ground level, utilizing the natural slope angle, filling in the area around structures with soil, and promoting native shrub-grassland re-vegetation



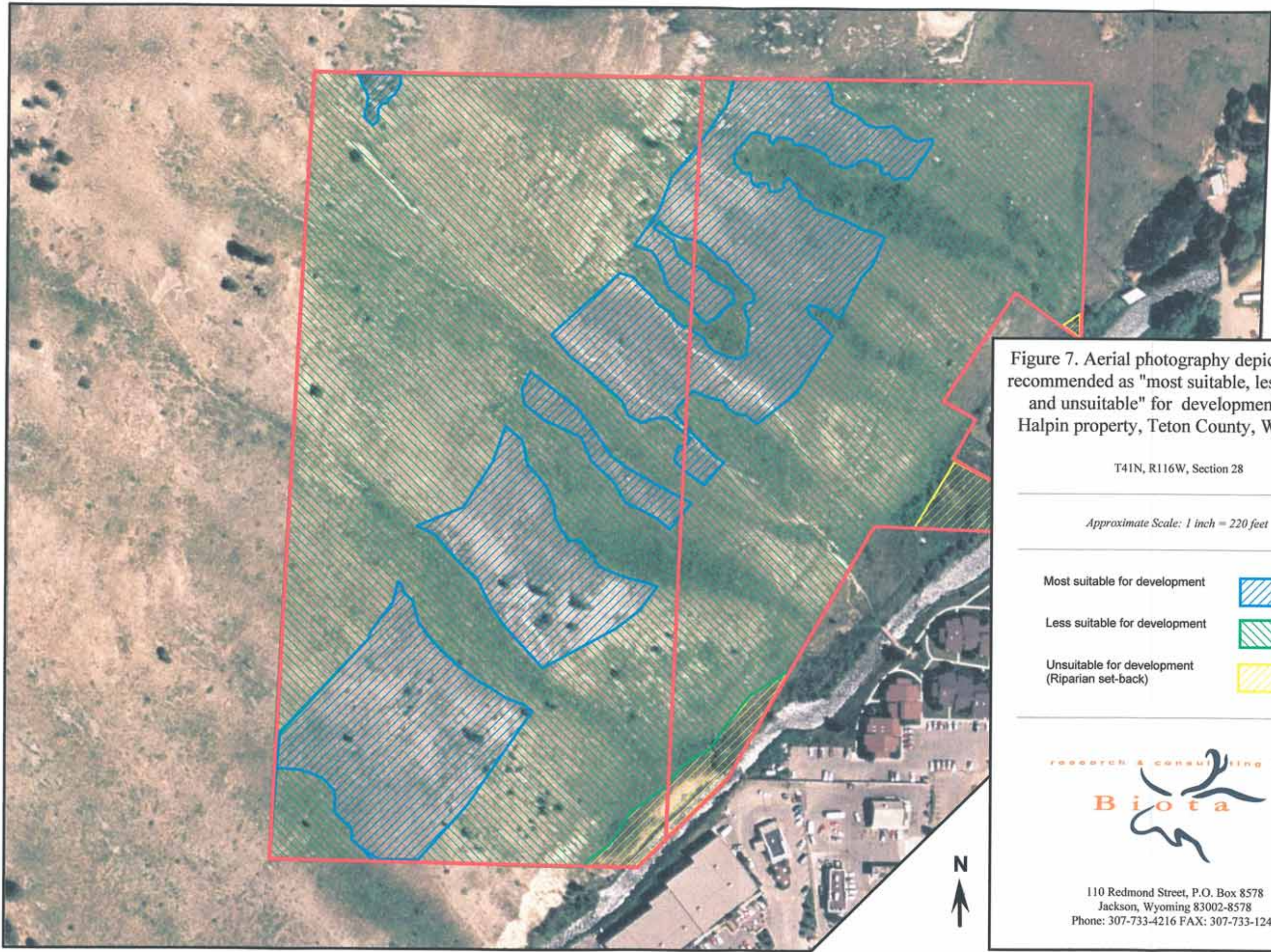





Figure 7. Aerial photography depicting areas recommended as "most suitable, less suitable, and unsuitable" for development on the Halpin property, Teton County, Wyoming.

T41N, R116W, Section 28

Approximate Scale: 1 inch = 220 feet

- Most suitable for development 
- Less suitable for development 
- Unsuitable for development (Riparian set-back) 



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around and perhaps on top of structures, both ecological and scenic impacts can be substantially minimized.

The negative effects associated with human occupation of crucial mule deer winter range will almost certainly be diminished if specific land management and behavioral guidelines are followed. Fences, which often disrupt or discourage normal wildlife movement patterns, are especially dangerous to mule deer wintering on steep, unstable slopes. The risk of injury or death associated with jumping fences and excessive energy utilization related to fence avoidance are significant potential problems on the Halpin property. The obvious solution is simply to remove all existing fences (dilapidated barbed-wire fencing is present on the northern and southern property boundaries) and not build any new fences. This will allow mule deer to utilize almost all of the existing winter range and move through the area unimpeded.

Livestock pasturing on the Halpin property is strongly discouraged for several reasons. Pasturing livestock would require fences that interrupt mule deer movement and greatly diminish the quality and quantity of forage available to mule deer during the most critical time of year. In addition, livestock utilization of the Halpin parcel would significantly increase the erosion potential and introduction of exotic and invasive plant species, further diminishing the habitat availability for mule deer in winter.

Domestic pet occupation of the property is also discouraged unless pets are strictly confined to the house and immediate vicinity. Unrestrained pets can easily disrupt wildlife use on the property; dogs will readily chase, harass, and even kill both small and large mammals as well as birds. In addition, although less conspicuous than dogs, free-roaming cats are effective predators of small birds and mammals. Wintering mule deer are especially susceptible to harassment and death related to dog chasing events.

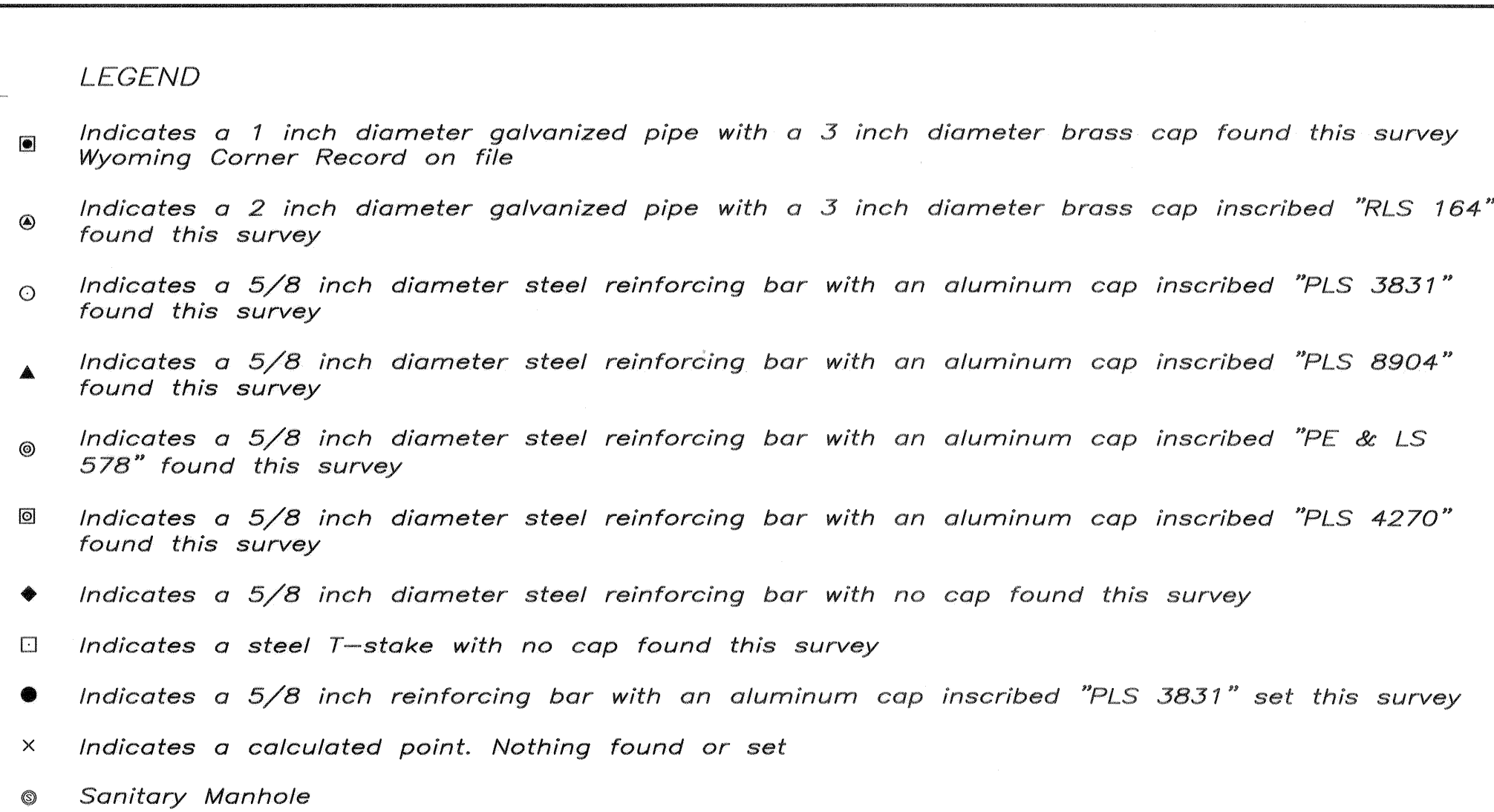
Recreational activities on the Halpin property in the winter should be avoided. Hiking, skiing, snowshoeing, sledding, and snowmobiling can interrupt mule deer foraging, resting, and movement patterns and often result in deer fleeing and expending much needed energy. Special precautions must also be taken when driving roads and driveways leading to residences in the winter, since mule deer will likely take advantage of this path of least resistance.

The intentional artificial feeding of mule deer (or any other wildlife species) on the property is strongly discouraged. Artificial feeding draws wildlife away from traditional ranges, interrupts traditional migration routes, and often forces wildlife into areas with less than ideal environmental conditions. Feedgrounds also concentrate wildlife in high numbers which expedites the spread of disease and diminishes the quantity and quality of natural forage in the immediate vicinity of the feedground. In addition, habituation to the presence of humans increases the chance of death by vehicle collision, domestic pet incident, hunting, and/or poaching.

## REFERENCES

- Biota Research and Consulting, Inc. 1979-1992. Progress reports for wintering ecology of the Gros Ventre Buttes mule deer herd. Jackson Hole, Wyoming. Unpubl.
- Campbell, T. M. 1981-90. Winter ecology and migratory movements of the Gros Ventre Buttes mule deer herd, Jackson Hole, Wyoming. Progress Reports I-XI. Unpubl.
- Clark, T.W. 1981. Ecology of Jackson Hole, Wyoming: A Primer. Paragon Press, Salt Lake City. 110 pp.
- Cowardin, L. M., V. Carter, F. C. Golet and E. T. LaRoe. 1979. Classification of Wetlands and Deep Water Habitats of the United States. FWS/OBS-79/31. USDI, Fish and Wildlife Service, Washington, DC. 131 pp.
- Dahl, T. E. and C. E. Johnson. 1991. Wetlands Status and Trends in the Conterminous United States, mid-1970's to mid-1980's. USDI, Fish and Wildlife. Service, Washington, D.C. 28 pp.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, Vicksburg, MS. 169pp.
- Jackson-Teton County. 1994. Jackson-Teton County Comprehensive Plan and Land Use Regulations. Unpubl.
- Mackie, R.J., K.L. Hamlin and D.F. Pac. Mule Deer. Montana Dept. of Fish, Wildlife and Parks. Federal Aid in Wildlife Restoration Project W-120-R.
- Minta, S. C. and T. M. Campbell III. 1991. Wildlife-habitat assessment and analysis with reference to human impacts in Jackson Hole, Wyoming. Unpubl. 1st Edition Final Report to Teton County Board of County Commissioners, Jackson, WY. 162 pp.
- Mitsch W. J. and J. G. Gosselink. 1993. Wetlands. Van Nostrand Reinhold, New York, NY. 539pp.
- Wallmo, O.C. 1981. Mule and Black-tailed Deer of North America. The Wildlife Management Institute. University of Nebraska Press, Lincoln, NE. 605pp.
- WGFD. 1991. Endangered and Nongame Bird and Mammal Investigations. Annual Completion Rept. 1990-1991. Cheyenne, WY.
- Young, J. F. 1982. Soil Survey of Teton County, Wyoming and Grand Teton National Park. USDA, Soil Conservation Service.





SURVEYOR:  
PIERSON LAND WORKS, LLC  
180 S. WILLOW ST.  
P.O. BOX 1143  
JACKSON, WYOMING 83001  
PHONE 307-733-5429

PREPARATION DATE: FEBRUARY 16, 2012

CERTIFICATE OF APPROVAL  
State of Wyoming )  
County of Teton ) ss  
Town of Jackson )

The Boundary Adjustment was approved by the Planning Director of the Town of Jackson on this 22nd day of February, 2012, and complies with the requirements of the Town of Jackson Land Development Regulations in effect this date.

Tyler Sinclair, Planning Director

The foregoing instrument was acknowledged before me by Tyler Sinclair this 13th day of April, 2012.

*Witness my hand and official seal.*

Notary Public My commission expires: 2-10-15

*CERTIFICATE OF OWNERS*


State of Wyoming)  
County of Teton ) ss

The undersigned owners and proprietors of the lands shown hereon hereby certify that the foregoing adjustment and configuration of the boundary lines shown hereon is with their free consent and in accordance with their desires.

LUKAS FARMS, LLC  
AN ARKANSAS LIMITED LIABILITY COMPANY

*SIGNATURES BY SEPARATE AFFIDAVIT*

Map to Accompany  
Minor Boundary Adjustment  
PREPARED FOR  
**LUKAS FARMS, LLC**  
Being a Portion of the  
SW $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 28  
T. 41 N., R. 116 W., 6th P.M.,  
TOWN OF JACKSON, WYOMING



**we define, design & deliver**  
the places that you play, Live & Work

**Pierson Land Works LLC**  
P.O. Box 1143  
180 S. Willow St.  
Jackson, WY 83001  
Tel 307. 733.5429  
Fax 307. 733.9669  
[piersonlandworks.com](http://piersonlandworks.com)

Sheet 1 of 1



## LETTER OF AUTHORIZATION

Lukas Farms, LLC

, "Owner" whose address is: \_\_\_\_\_

P.O. Box 496 Jackson, Wyoming 83002

(NAME OF ALL INDIVIDUALS OR ENTITY OWNING THE PROPERTY)

Lukas Farms, LLC

, as the owner of property  
more specifically legally described as: \_\_\_\_\_

PT S1/2SE1/4, SEC. 28, TWP. 41, RNG. 116 PARCEL C and D

(If too lengthy, attach description)

HEREBY AUTHORIZES Jorgensen Associates, Inc.

as

agent to represent and act for Owner in making application for and receiving and accepting on Owners behalf, any permits or other action by the Town of Jackson, or the Town of Jackson Planning, Building, Engineering and/or Environmental Health Departments relating to the modification, development, planning or replatting, improvement, use or occupancy of land in the Town of Jackson. Owner agrees that Owner is or shall be deemed conclusively to be fully aware of and to have authorized and/or made any and all representations or promises contained in said application or any Owner information in support thereof, and shall be deemed to be aware of and to have authorized any subsequent revisions, corrections or modifications to such materials. Owner acknowledges and agrees that Owner shall be bound and shall abide by the written terms or conditions of issuance of any such named representative, whether actually delivered to Owner or not. Owner agrees that no modification, development, platting or replatting, improvement, occupancy or use of any structure or land involved in the application shall take place until approved by the appropriate official of the Town of Jackson, in accordance with applicable codes and regulations. Owner agrees to pay any fines and be liable for any other penalties arising out of the failure to comply with the terms of any permit or arising out of any violation of the applicable laws, codes or regulations applicable to the action sought to be permitted by the application authorized herein.

Under penalty of perjury, the undersigned swears that the foregoing is true and, if signing on behalf of a corporation, partnership, limited liability company or other entity, the undersigned swears that this authorization is given with the appropriate approval of such entity, if required.

OWNER:

(SIGNATURE) (SIGNATURE OF CO-OWNER)

Title: Assistant Secretary

(if signed by officer, partner or member of corporation, LLC (secretary or corporate owner) partnership or other non-individual Owner)

STATE OF Arkansas )

)SS.

COUNTY OF Benton )

The foregoing instrument was acknowledged before me by Sean Evans this 7th day of April, 2021.

WITNESS my hand and official seal.

(Seal)

(Notary Public)

My commission expires:

