ENVIRONMENTAL ANALYSIS

Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

Parcel: 22-39-13-17-2-00-003

January 28, 2025

Prepared for:
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TABLE OF CONTENTS

INTRODUCTION

Alder Environmental, LLC (Alder) conducted an Environmental Analysis (EA) on behalf of Granite Hoback Ranch LLC (the landowner) for a 33.62-acre (surveyed) parcel located at 9400 MacLeod Rd (the Property). The Property is located within the Granite Creek drainage, generally east of Hoback Junction in Teton County, WY (Appendix A - Figure 1). The Property is not located within the Natural Resources Overlay (NRO), however, is surrounded by Bridger Teton National Forest (BTNF). Due to the proximity to protected wildlife habitat, the landowner decided to pursue an Environmental Analysis to determine compliance with Teton County Land Development Regulations Division 5.1, *General Environmental Standards* and Section 5.2.1, *Natural Resources Overlay (NRO) Standards* (Appendix A - Figure 1).

ASSESSMENT OF NRO APPLICABILITY

As part of ZCV2024-0004, a request was submitted to Teton County to confirm that "the Property is not located within the Natural Resources Overlay or Scenic Resources Overlay." The County responded with a confirmation letter stating, "Confirmed... It is not within the Natural Resources Overlay or Scenic Resources Overlay."

Although the mapped NRO does not include the Property (as confirmed by Teton County in ZCV2024-0004), Section 5.2.1.B.2 of the Teton County Land Development Regulations (LDRs) requires a site-specific analysis to determine whether the land should be included in the NRO. This section summarizes Alder's analysis conducted in accordance with this requirement, as well as relevant provisions and definitions outlined in the LDRs.

The purpose of the Natural Resources Overlay (NRO), as defined by the Teton County Land Development Regulations (LDRs), is to protect critical natural areas that are essential for the survival of specific wildlife species and ecosystems. These areas include migration routes and crucial winter ranges for elk, mule deer, and moose; nesting and winter habitat for trumpeter swans; spawning areas for cutthroat trout; and nesting and crucial winter habitat for bald eagles (Section 5.2.1.B.1).

The Property has been evaluated based on the NRO definition, and the findings are detailed in this EA. A site-specific analysis was conducted using Wyoming Game and Fish Department (WGFD) designated crucial habitat mapping as the primary reference, supplemented by field data, aerial imagery, and the Teton County Focal Species Habitat Mapping Project (Alder, 2017). An evaluation of WGFD map layers determined that crucial wildlife habitat for ungulates (elk, mule deer, and moose), cutthroat trout, trumpeter swans, and bald eagles is not present within the Property.

Based on the definition of the NRO in the LDRs and an evaluation of each criterion, the Property does not meet the requirements for inclusion in the NRO. While the Property is located in a remote area adjacent to national forest and offers permeability for wildlife movement, the current intensive use and development on the Property reduces its suitability as crucial habitat. Additionally, no WGFD-designated crucial ranges or migration corridors have been identified within the Property. As a result, wildlife is more likely to rely on the adjacent protected lands, which provide more intact and suitable habitat for the species protected under the LDRs.

METHODS

Alder Environmental staff inventoried the natural resources and existing conditions within the entire 33.62-acre parcel on September 5 and October 3, 2024. An Aquatic Resources Inventory, including a wetland delineation according to U.S. Army Corps of Engineers standards, was also conducted within the Property and to the west along Granite Creek, and the findings are detailed in the Aquatic Resources Inventory (ARI) Report included in Appendix C. This inventory was undertaken to assess aquatic resources and identify any setbacks that might impact the Property.

The Property predominantly contains existing development and disturbance within a mosaic of mesic shrub dominated uplands, mixed conifer species forested habitats, and small areas of emergent and scrub-shrub wetlands (Appendix A – Figure 2). Wildlife use, protected waterbodies and wetlands, vegetative cover types, and potential mitigation areas were documented and mapped during the site visits. 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

The Property has been operating as a guest ranch since 1989 under CUP1989-0006 and is currently permitted under CUP2006-0004 and DEV2006-0016. Most recently, it was operated by Safari Club International, the previous landowner. Safari Club International, a nonprofit organization dedicated to advocating for hunters' rights and supporting sustainable wildlife conservation, advertised the ranch as the site of the "American Wilderness Leadership School," which hosted educational workshops on conservation and shooting sports (https://safariclub.org/about/).

The current CUP permits operation year-round with a maximum of 100 people on site, with up to 150 allowed for day use on two days per year. The CUP also establishes a maximum building footprint of 22,000 square feet and allows specific uses, including a shooting range, guest cabins, guided hikes, and a food service facility. Review of aerial imagery and on-site observations confirms many of these uses are active.

Existing development on the Property includes two quadplexes, seven cabins, a lodge, a maintenance shop, a caretaker's duplex, three sheds, a SNOTEL equipment shelter, two shooting range structures, a skeet shooting range, and multiple archery structures. Additional features include a lookout, fire hose structure, generator shed, multiple propane tanks, diesel and gasoline fueling stations, as well as laundry and storage facilities. A gravel driveway connects the northern and southern property boundaries, with multiple gravel parking areas and a two-track gravel road linking the Property to an adjacent parcel to the east.

The current habitat conditions are representative of a mid-elevation late-stage conifer forest with openings of mesic shrub and grassland (Appendix A-Figure 2). The SNOTEL station, sheds, archery structures, and pathways are scattered throughout the conifer forest in the center of the Property. The Property sits on an elevated bench above the Granite Creek floodplain and riparian corridor. The Property is largely uplands with a small emergent wetland swale supported by groundwater fluctuations and seasonal snowmelt. This swale has become disconnected from Granite Creek due to previous development on the Property (Appendix A-Figure 3).

VEGETATIVE COVER TYPES

Vegetative cover types are used by Teton County LDRs to determine relative habitat values and development priority areas on the Property (Section 5.2.1.F, *Vegetative Cover Type Standards*). The Property's vegetative cover consists of predominantly mesic shrub and mixed conifer forests with smaller areas of emergent and scrub-shrub wetlands. Scrub-shrub wetlands are associated with the Granite Creek floodplain.

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

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

Vegetative Cover Type	Area (ac)	% of Total Area	Habitat Priority Ordinal Ranking (10 being the highest value)
Scrub-Shrub Wetland	0.70	2.1%	10
Emergent Wetland	0.12	0.4%	9
Coniferous Forest	8.91	26.5%	5
Mesic Shrub	9.37	27.9%	5
Mesic Grassland	5.83	17.3%	3
Disturbed Grassland	5.00	14.9%	1
Disturbed (Existing Development)	3.68	10.9%	Not Ranked
TOTAL	33.62*	100%	

*The parcel boundary was surveyed at 33.62 acres, which differs from the Teton County GIS at 33.64 acres.

Wetland

A total of 0.82 acres (2.4%) of the Property consists of wetland cover types: natural emergent and scrub-shrub wetlands. Emergent wetland areas are dominated by Northwest Territory sedge (*Carex utriculata*), Nebraska sedge (*Carex nebrascensis*), brook saxifrage (*Micranthes odontoloma*), showy coneflower (*Rudbeckia occidentalis*), field horsetail (*Equisetum arvense*), largeleaf avens (*Geum macrophyllum*), fowl mannagrass (*Glyceria striata*), and willow dock (*Rumex salicifolius*). Dominant species present within scrub-shrub wetland areas include Bebb's willow (*Salix bebbiana*), Booth's willow (*Salix boothii*), Geyer willow (*Salix geyeriana*), and grayleaf willow (*Salix glauca*). Emergent wetland is assigned an original ranking of 9 and shrub-scrub wetland is assigned an ordinal ranking of 10, the highest value possible for cover types.

Coniferous Forest (mesic)

A total of 8.91 acres (26.5%) of the Property consists of coniferous forest cover types. These forested areas, which occupy much of the center of the Property and a small patch in the northwest corner, are dominated by lodgepole pine (*Pinus contorta*), Engleman spruce (*Picea englemannii)*, Douglas fir (*Pseudotsuga menziesii*), and are assigned an ordinal ranking of 5. The forested area consists of conifers that are spaced out and of relatively uniform age, with little understory.

Mesic Shrub

A total of 9.37 acres (27.9%) of the Property is comprised of mesic shrub cover types. These areas are dominated by big sagebrush (*Artemisia tridentada*). The northern portion of the Property is composed of this cover type which is assigned an ordinal ranking of 5.

Mesic Grassland

A total of 5.83 acres (17.3%) of the Property is comprised of mesic grassland (ordinal ranking 3). The dominant species in the mesic grassland area are smooth brome (*Bromus inermis*), Kentucky blue grass (*Poa pratensis*), common timothy (*Phleum pratense*), and meadow foxtail (*Alopecurus pratensis*). These areas are interspersed throughout the Property among the forest and shrub communities.

Disturbed Grassland and Existing Development

A total of 5.00 acres (14.9%) of disturbed grassland and 3.68 (10.9%) of existing development exist in the Property. Developed areas include driveways, parking areas, residences, a maintenance barn, and recreation areas. Disturbed grasslands have an ordinal ranking of 1 while existing development is unranked, indicating that these areas are high priority areas for redevelopment and are considered low habitat quality for Teton County protected species and their protected habitats.

PROTECTED WATERBODIES AND WETLANDS

Figure 3 displays the Property's waterbodies and delineated wetlands. Alder conducted a wetland delineation on September 5, 2024. To get a more comprehensive understanding of the wetlands associated with Granite Creek, Alder delineated wetlands to the west of the Property within the BTNF. The Aquatic Resources Inventory (ARI) Study Area includes the entire Property as well as a portion of the

BTNF west of the Property to Granite Creek as depicted in Appendix B – Figure 2. Alder has prepared an ARI Report (Appendix C) according to a USACE Wyoming Regulatory Office *Aquatic Resources Inventory Guidance memo*.

Waterbodies

Alder did not identify any waterbodies within the Property. Granite Creek is a perennial stream flowing north to south/southwest and located to the west of the Property within the BTNF. Granite Creek is a tributary of the Hoback River and is supplied by snowmelt from the Gros Ventre Range. This waterway has braided channels and supports a floodplain of wetlands and riparian areas.

Granite Creek has annual flows over 3 cfs and supports cutthroat trout spawning habitat and is therefore designated by Teton County LDRs as a stream with a variable width setback of 50-150 feet from the river mean high water or top of bank. As depicted in Appendix A, Figure 3, this setback varies from 50 to 150 feet depending on the extent of the riparian plant community.

Wetlands

Alder delineated natural emergent (0.13 ac) and scrub-shrub (0.49 ac) wetlands within the ARI Study Area. The emergent wetland swale is surrounded by upland forested areas; however, the wetland was determined to be emergent based on the herbaceous vegetation within the wetland plane. This wetland is hydrologically supported by groundwater table fluctuations and spring snowmelt. Historically this wetland swale was likely connected to Granite Creek; however, previous development of the road on the Property has disconnected this swale from Granite Creek and created a dam. As a result, spring snowmelt now pools seasonally at the western end of the swale, helping to sustain the wetland.

There are natural scrub-shrub wetlands located within the Granite Creek floodplain. These wetlands are hydrologically supported by Granite Creek and seasonal groundwater table fluctuations. A portion of these scrub-shrub wetlands extend into the southwest corner of the Property.

All identified wetlands receive a 30 ft wetland setback (Appendix A - Figure 3) and if impacted, require mitigation at a 2:1 ratio according to Teton County LDR Section 5.1.1.D.3.b.iv *Wetland Impacts Require Mitigation*.

WILDLIFE HABITATS PROTECTED BY THE NRO

Alder's ecological review indicates that the Property does not meet the LDR requirements to be included in the NRO, providing limited winter habitat for Teton County protected wildlife species. While the Property contains vegetative cover types identified by research as valuable winter habitat for some species, it does not include areas designated as crucial winter habitats or migration corridors by the Wyoming Game and Fish Department (WGFD) and protected by Teton County, as defined in LDR Section 5.2.1.C and G (*Findings for the NRO* and *Crucial Habitat Protection Standards*).

On January 27, 2025, Heidi Bellorado contacted Cheyenne Stewart and Aly Courtemanch to confirm the accuracy of the WGFD elk migration data, as the data are no longer hosted on the WGFD website. During this discussion, WGFD staff clarified that wildlife data could be analyzed at a property-specific level; however, they noted a six-week processing timeframe for such requests. Due to this timeframe, Alder was unable to obtain the property-specific data within the desired timeline for the EA submittal.

The habitat assessment below evaluates the Property's value for Teton County-protected wildlife species using available data and literature, not only using WGFD designations and LDR definitions to provide a comprehensive understanding of the resources and their significance within the Property. Table 2 summarizes the Teton County 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	No	Possible
Elk Migration Corridors	No	Yes
Elk Crucial Winter Range	No	No
Mule Deer Migration Corridors	No	No
Mule Deer Crucial Winter Range	No	No
Trumpeter Swan Nesting Habitat	No	No
Trumpeter Swan Winter Habitat	No	No
Snake River Cutthroat Trout Spawning Areas	No	Yes
Bald Eagle Crucial Nesting Habitat	No	No
Bald Eagle Crucial Winter Habitat	No	Possible

Moose – Crucial Winter Habitat

The Property is not located in WGFD-designated moose crucial winter/yearlong range (WGFD, 2012) (Appendix A – Figure 4). However, tall shrub and willow habitats within the riparian corridor of Granite Creek, directly adjacent to and partially within the southwestern portion of the Property, may provide suitable winter habitat for moose. Crucial habitat is defined as areas used by a species during winter months in 8 out of 10 years (Section 5.2.1.B.3, *NRO Definitions*, Teton County, 2018). Vegetation such as willow (*Salix* spp.), red-osier dogwood, chokecherry, serviceberry, and immature trees like aspen and cottonwood serve as essential food sources during the winter months (Harry, 1957).

Although the minimal scrub-shrub habitat on the Property provides potentially suitable cover and forage for moose in winter, the proximity of existing development, combined with the absence of WGFD-designated crucial range, suggests that the area is unlikely to function as critical winter habitat used consistently in 8 out of 10 years. Given the availability of undeveloped, more extensive, and suitable habitat in adjacent areas, moose are more likely to rely on those nearby undisturbed habitats if they winter in the area.

The remainder of the Property is predominantly coniferous forest (Engelmann spruce, Douglas fir, and lodgepole pine) and disturbed areas that do not constitute crucial moose winter habitat. According to the Teton County Focal Species Habitat Mapping Project, the scrub-shrub wetland and forested southern portion of the Property are identified as suitable winter habitat for moose (Alder, 2017).

Moose migrate short-to-moderate distances from low-elevation ranges in the winter to higher elevation ranges in the summer. In a 2008 moose radio collar study, moose were found to select winter habitats in low elevation, riparian shrub areas, adjacent to coniferous cover (Becker, 2008). As stated in LDR Section 5.2.1.C.4.c, “During winter, the Teton County moose population is confined primarily to riparian areas within the valley, low-elevation subalpine fir forests, and some shrubland habitat types.” Even though the Property contains moose winter habitat, the NRO and WGFD do not designate the Property as moose crucial winter habitat, likely due to its mid-elevation location or the dominance of coniferous forest.

Mule Deer – Crucial Winter Range & Migration Corridors

The Property is not located within Wyoming Game and Fish Department (WGFD) designated mule deer crucial winter range or migration corridors (WGFD, 2012) (Appendix A – Figure 4). Mule deer winter range is typically characterized by south-facing sagebrush or mesic shrub slopes with thinner snow cover during winter months, which allows access to forage (Riginos et al., 2013). The northern portion of the Property contains sagebrush cover on a gradually sloping southwestern aspect, which exhibits some characteristics of mule deer winter range. However, the slope is not steep enough to

consistently maintain thin snow cover, and the higher elevation of the Property likely results in deeper snowpack that would limit the availability of winter browse.

The Teton County Focal Species Habitat Mapping Project identifies suitable winter habitat in south facing steeper habitats to the east and west of the Property and within the Granite Creek floodplain in the BTNF (Alder, 2017). Wintering mule deer are more likely to rely on nearby habitats with steeper slopes and less human activity, as these areas offer more favorable conditions. The proximity of the Property to existing development further reduces its suitability as crucial winter habitat.

As stated in LDR Section 5.2.1.C.3.f, "Crucial mule deer winter range is limited and occurs at low elevations where shrub scrub-grassland habitat types are located." Due to the mid-level elevation of the Property and its limited topographic and vegetative features, the NRO and WGFD do not designate the Property as mule deer crucial winter range.

Elk Winter Range & Migration Corridors

The Property is located within a half mile of a WGFD-designated elk migration route. The mapped migration corridor is located directly south of the Property with a second migration corridor mapped beyond the half-mile buffer to the north (Figure 4). Elk may use the Property while migrating from summer ranges to low elevation winter range.

The Jackson elk (*Cervus elaphus*) herd migrates from summer ranges in Grand Teton National Park (GTNP), Yellowstone National Park (YNP), and BTNF to lower elevation winter ranges within the Gros Ventre River Vally and the National Elk Refuge, where approximately 60% of the population winters (Wachob and Smith 2003). Elk are sensitive to human disturbance and are more likely to utilize areas with the least obstruction and human activity. When migrating, elk tend to avoid structures up to a distance of 75m (246 ft) but are comfortable within a distance of 100m or greater (328 ft) of structures. Elk select routes with visible woody vegetation targets (Wachob and Smith, 2003).

The Property does not overlap with any WGFD mapped crucial winter range. Elk generally use grassland and shrub habitats with interspersed forests during the winter months (Boyce et al., 2003). The *Teton County Focal Species Habitat Mapping Project* identifies elk suitable winter habitat within the northern mesic shrub portion of the Property (Alder, 2017). Elk may utilize the mesic shrub and mesic grassland habitats located in the Property if the snow depths allow adequate movement by elk during winter months (Section 5.2.1.B.3, *NRO Definitions*, Teton County, 2018). However, due to the mid-elevation habitat and existing human disturbance, the NRO and WGFD do not designate the Property as elk crucial winter habitat.

Trumpeter Swan – Crucial Winter Habitat & Nesting Habitat

Overhunting and habitat loss brought trumpeter swans in the lower 48 close to extinction by 1930, but aggressive management practices recovered the Rocky Mountain population. However, the trumpeter swan's status in the Greater Yellowstone Ecosystem is still recognized as delicate due to pressure on winter ranges and shrinking nesting habitat. Some of the trumpeter swans that winter in and around Teton County remain in the area through nesting season, while others migrate north to nest. Trumpeter swans are sensitive to human disturbance, generally selecting habitat isolated from development, and human activity can hinder nesting success. They typically select shallow, slow-moving waters with extensive aquatic beds away from human disturbance for nesting and they rely on aquatic habitats that remain ice-free for winter habitat where they can access aquatic vegetation (NPS, n.d.).

Trumpeter swan winter habitat and summer habitat identified by the *Teton County Focal Species Habitat Mapping Project* are not within the Property (Alder, 2017). Winter trumpeter swan surveys conducted by WGFD in 2013, 2015, and 2018 do not document swans within half a mile of the Property (data provided to Alder by WGFD). With fast-moving waters and cobble bed substrates, Granite Creek lacks the requisite extensive aquatic beds and aquatic and emergent vegetation that provide food and cover for trumpeter swans (Squires and Anderson, 1995; Patla and Lockman, 2004).

Snake River Cutthroat Trout – Spawning Habitat

Snake River cutthroat trout are native only to the upper Snake River basin above Palisades Reservoir. Habitat alteration caused by flow regulation from the Jackson Lake Dam, irrigation diversions, and floodplain modifications due to construction of an extensive levee system along the Snake River are primary factors that make Snake River cutthroat trout vulnerable. Snake River cutthroat trout typically spawn between late March and early July in tributary streams (Gresswell and Homel, 2008).

Granite Creek flows adjacent to the Property and provides suitable spawning habitat for Snake River cutthroat trout. Alder scientists observed suitable spawning habitat outside of the Property during site visits on September 5 and October 3, 2024. Granite Creek is characterized by cold, clear, well-oxygenated stream flow with cobble substrates ranging in size from 6-110mm. Trout spawning habitat is not located within the Property. Minor proposed development is located within 150 feet of Granite Creek. As stated in the LDRs, no physical development shall occur within 150 ft of natural waterbodies that provide spawning habitat unless the applicant can demonstrate there will be no runoff from development to those waterbodies and can avoid disturbance to cutthroat trout spawning habitat (Div. 5.2.1.G.5. *Cutthroat Trout Spawning Areas*), which is addressed in the Development Impact Assessment section of this report.

Bald Eagle – Crucial Winter Habitat & Nesting Habitat

Rapid declines of bald eagles in the 1970's led to the listing of the species as endangered under the Endangered Species Act. This and other management efforts allowed bald eagles to recover to more sustainable numbers and the species was delisted in 2007. However, their population size and breeding distribution in Wyoming is still limited and the species is listed as a Species of Greatest Conservation Need by the WGFD and a Bird of Conservation Concern by USFWS. The species is also protected under the 1918 Migratory Bird Treaty Act and the 1940 Bald and Golden Eagle Protection Act, both of which prohibit "take" of bald eagles including their parts, nests, or eggs.

Bald eagles in the Greater Yellowstone Ecosystem (GYE) are generally non-migratory. In the Teton Region, the most important nesting habitat has been identified along the Snake River and it's major tributaries like the Salt River and the Gros Ventre River, in areas which remain ice-free in the winter, experience limited human activity, and exhibit high sinuosity with abundant islands, riffles, and pools (WGFD, 2007). Most of the regional bald eagle population nests along the Snake River, with groves of mature cottonwoods serving as the most common nesting habitat. In some cases, tall riverside conifers are used as nest trees, particularly if they are larger and taller than surrounding trees, have low to moderate canopy closure, and provide unobstructed views toward nearby waterbodies (WYNDD, 2004). Bald eagles are sensitive to human activity, so nest site selection also depends on distance from human disturbance. Bald eagle pairs are territorial, defending a nesting territory against intrusion by other eagles. They exhibit site fidelity, returning to a nesting territory each year and a territory often includes an active nest as well as one or more alternate nests (WGFD, 2007). Teton County bald eagles generally begin nesting in late February, lay their eggs between early March and mid-April, and the young fledge between late June and early July (Whitfield, 2011).

The LDRs define crucial nesting habitat for bald eagles, which is essential for the species' survival, as the Snake River floodplain and its associated riparian zones (Section 5.2.1.C.7.g). The Property does not meet this definition due to its distance from the Snake River corridor. While large conifers along the Granite Creek corridor on the Property may provide potential nesting habitat for bald eagles, they do not constitute as critical, where impacts to this area would limit nesting habitat upon which the regional population depends. Additionally, the dense canopy cover of these trees makes them less suitable as nesting sites. The proximity of human activity and the availability of alternative habitats with less disturbance further reduce the likelihood that these trees would be selected for nesting (WYNDD, 2004). The closest mapped bald eagle nest is located approximately 1 mile south of the Property near the Jack Pine houses. This nest was last documented in 2016 by Susan Patla of the WGFD and is included in the Focal Species dataset (Alder, 2017).

Large open water supporting waterfowl and fish, as well as wintering ungulate ranges, provide important food sources for bald eagles during the winter months (Swenson et al. 1986). In the Greater Yellowstone Ecosystem, bald eagles primarily winter along major rivers and often remain close to their nests during winter (Swenson et al. 1986). Since no crucial ungulate winter ranges are present on the Property, and the Property is unlikely to serve as crucial nesting habitat, it does not provide adequate carrion forage to function as vital winter habitat under this definition. Swenson et al. (1986) found that 90% of bald eagles surveyed in Yellowstone and Grand Teton National Parks relied on carrion during winter months.

While the conifer trees along the Granite Creek corridor may offer roosting and foraging opportunities for bald eagles during winter, the seasonal freeze of Granite Creek, particularly during severe winters (per correspondence with the Property manager of >10 years), may limit consistent access to fish forage. The absence of crucial ungulate ranges and carrion, combined with the high elevation and smaller tributary nature of the Granite Creek corridor, suggests the Property is unlikely to serve as crucial winter habitat. Evidence indicates that bald eagles in the region depend more heavily on the Snake River corridor and associated ungulate ranges during winter months.

Overall, the Property does not provide vital habitat for nesting or wintering bald eagles. While the Granite Creek corridor may offer suitable habitat, it is not likely to function as crucial habitat due to its distance from the Snake River corridor, which serves as the primary critical habitat for bald eagles in the region.

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, 2025)

SPECIES	STATUS
Birds	
Yellow-Billed Cuckoo (*Coccyzus americanus*)	Threatened
Insects	
Monarch Butterfly (*Danaus plexippus*)	Proposed Threatened
Fish	
None	
Mammals	
Canada Lynx (*Lynx Canadensis*)	Threatened
Grizzly Bear (*Ursus arctos horribilis*)	Threatened
North American Wolverine (*Gulo gulo luscus*)	Threatened
Conifers and Cycads	
Whitebark pine (*Pinus albicaulis*)	Threatened

The Yellow-billed Cuckoo range in Wyoming is located within woody, riparian areas with dense understory vegetation (Bennett and Keinath, 2003). This habitat is not present on the Property due to the lack of extensive, dense riparian shrub understory. Yellow-billed Cuckoo presence is rare and incidental in Teton County, WY.

In Wyoming, Canada lynx persist as small populations consisting of relatively few individuals (Squires, 2015). Historically and currently, lynx presence has been documented in western Wyoming, including the Wind River Range, Wyoming Range, and the Yellowstone area. The primary vegetation contributing to lynx habitat in Wyoming includes subalpine fir (*Abies lasiocarpa*), Engelmann spruce (*Picea englemannii)*, and lodgepole pine (*Pinus contorta*) forests at higher elevations (6,500–9,800 ft; ILBT, 2013). Lynx are also primarily dependent on snowshoe hares for prey which select for aspen and tall forb community types in this region, particularly those with snowberry (*Symphoricarpos alba*),

serviceberry (*Amelanchier alnifolia*), and chokecherry (*Prunus virginiana*) shrub understories. Foraging and denning habitat for lynx is typically characterized by dense understory vegetation and coarse woody debris (ILBT, 2013).

The Property does not provide suitable lynx habitat due to a lack of understory vegetation in the forest cover. However, lynx are known to travel over wide ranges and may utilize suitable habitat in nearby national forest areas around the Property. The existing development and human disturbance on the Property likely preclude lynx use, as they are elusive and sensitive to human disturbance. Although the Property lies within designated critical habitat for lynx (USFWS, 2025), it is likely to be avoided by lynx, who tend to select undisturbed habitats nearby. Given the existing development and human activity, the proposed development is not expected to contribute additional negative impacts to lynx or result in any take or threats to the species.

North American wolverine require terrain with deep, persistent snow at high elevations ranging from 5,906-11,483 ft and containing physical features such as talus slopes and other rugged terrain. Habitat selection for reproduction is highly correlated with the persistence of spring snowpack (USFWS, 2023). Observations within the GYE suggest long-term residency and the potential for continued population expansion within the ecosystem. The Property is located within modeled core habitat areas (Carroll et al., 2020). However, the Property lacks desirable physical landform features and a deep persistent spring snowpack due to the mid-range elevation, suggesting use of the Property may be unlikely and incidental. Incidental wolverines in the area are also likely to avoid the development and activity in the inholding parcels and select for undisturbed habitat in the vicinity.

Protections for grizzly bears within the GYE were recently restored in September 2018. The distribution of grizzly bears within the GYE has expanded throughout Teton County in recent years (Bjornlie and Haroldson, 2018). The Granite Creek corridor is a suitable wildlife movement corridor likely subject to a wide variety of vertebrate species' movement patterns, including grizzly bears. Grizzly bears may move through the Property during seasonal movements due to the location along Granite Creek and proximity to BTNF. Wildlife managers do not encourage grizzly bears in residential areas.

Whitebark pine were not observed on the Property during the 2024 vegetation inventory, and this species is typically found near the subalpine treeline with other high-mountain conifers such as lodgepole pine (*P. contorta var. latifolia*), Englemann spruce (*Picea engelmannii*), and subalpine fir (*Abies lasiocarpa)* (Arno and Hoff, 1990). This species has the potential to exist on the Property as it lies within the lower end of the suitable elevation range. The removal of individual trees will be reviewed as part of the overall site development and reclamation effort to prevent impacts to whitebark pine and minimize the overall impacts to the coniferous forest habitat.

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). Monarchs may occasionally visit the Property and utilize nectar sources in the shrub and grassland cover types.

DEVELOPMENT IMPACT ASSESSMENT

METHODOLOGY

Per guidance from the Pre-Application Conference with Teton County (PAP2024-0081) and the subsequent summary checklist, the Development Impact Assessment evaluates both the preliminary site plan and finalized Limits of Disturbance (LOD), which includes areas of temporary impacts or removal of existing structures to be reclaimed to native vegetation.

During the Pre-Application Conference, Teton County recommended a phased approach to the project. This involves submitting different phases of development under separate Grading and Erosion Control (GEC) permits and Building Permits (BP) to streamline the review process, particularly from an engineering standpoint. The finalized LOD was designed to account for potential adjustments during the ongoing planning and design process. Therefore, this assessment evaluates impacts based on both the LOD and the preliminary site plan.

The purpose of this analysis is twofold:

1. To estimate permanent impacts and illustrate the general locations of proposed development based on the preliminary site plan.
2. To encompass the entire LOD, highlighting areas where impacts will be temporary or where existing development will be removed and reclaimed with native vegetation.

The habitat impact assessment below quantifies impacts within both the LOD and the preliminary site plan. Exact impacts to each habitat type will be documented in a subsequent Reclamation and Habitat Enhancement Plan, which will accompany future GEC and BP submissions. This plan will provide updated impact numbers, identify areas for reclamation, and include detailed methods for replanting native vegetation and ensuring successful restoration.

Description of Proposed Development

The landowner proposes to remove some existing structures, upgrade or replace others, and add several cabins. Structures and facilities along the entrance road will be removed, and these areas will be reclaimed with native vegetation. This will enhance the viewshed from Granite Road, remove structures currently located within the creek setback to ensure compliance, and cluster updated development on the southern half of the Property.

The preliminary site plan also proposes removing the lodge currently located within the coniferous forest and constructing a new lodge adjacent to a proposed habitat pond primarily in disturbed grassland areas along the updated road alignment in the west-central portion of the Property. Existing cabins and quadplexes on the south end of the Property will be converted from lodging units to employee housing accessory dwelling units (ARUs), and these lodging units will be replaced with 10 new detached cabins.

The caretaker's duplex is expected to be relocated to the southern side of the Property and repurposed as employee housing. The historic laundry cabin is expected to be relocated onsite and repurposed as part of the ranch amenities. Four meadow cabins will be situated adjacent to the east-west two-track overlooking the sage meadow, four creek cabins will be placed in the existing lawn area along the western edge of the Property, and two cabins will be located in existing clearings in the open conifer forest.

A new 1,000 square foot shop and spa and outfitter buildings will also be constructed in existing disturbed areas. The driveway and two-track roads will be re-routed to comply with natural resource setbacks and provide access to the new structures, with existing roads reclaimed with native plantings or converted to pedestrian pathways.

Modern leach fields will replace the existing ones. Outdoor amenities will include small terraces associated with the lodging units, an outdoor shooting sports area, and pathways that comply with aquatic resource setbacks.

The LOD, as shown in Figure 5, accounts for the grading and disturbance required for the preliminary site plan while providing flexibility for potential adjustments due to infrastructure or engineering needs, site logistics, and design considerations. Much of the LOD will involve temporary impacts that will be reclaimed, as well as areas where existing structures or infrastructure will be removed and restored to native vegetation.

PROTECTED RESOURCE & HABITAT SETBACKS/BUFFERS

The Property has not been determined to be within the NRO, and as such, the proposed development is not required to minimize impacts within higher-value habitat types or to mitigate for those impacts. However, the proposed site plan does minimize impacts to higher-value habitat types by proposing development within areas of existing development or disturbed grassland. Preliminary estimates of permanent impacts within higher-value habitat types are quantified and analyzed below. If Teton County determines that the proposed development should be held to NRO standards, ample opportunities for mitigation exist within the mesic grassland or disturbed areas throughout the Property.

All proposed development will be located outside the Granite Creek 50–150-foot setback and the 30-foot wetland setback, as specified in LDR Section 5.1.1.D. Only portions of the LOD are depicted within these setbacks where existing non-compliant structures will be removed and reclaimed to native vegetation, and where the existing road encroaches into the setback on the emergent wetland swale. In this case, the road will either be improved or converted to a pathway.

The proposed habitat pond will comply with all standards outlined in LDR Section 5.1.6.C, *Manmade Waterbodies,* and a Pond Habitat Review Letter will be submitted with the GEC for the proposed pond.

HABITAT IMPACT ASSESSMENT

While the Property contains vegetative cover types identified by research as valuable winter habitat for some species, it does not include areas designated as crucial winter habitats or migration corridors by the Wyoming Game and Fish Department (WGFD) and protected by Teton County, as defined in LDR Section 5.2.1.C and G (*Findings for the NRO* and *Crucial Habitat Protection Standards*). However, willow habitats within the riparian corridor of Granite Creek, directly adjacent to and partially within the southwestern portion of the Property, may serve as suitable winter habitat for moose. Additionally, the sagebrush-dominated northern portion of the Property may provide suitable winter habitat for mule deer when snow depths are manageable. Elk may also utilize the mesic shrub and mesic grassland habitats on the Property during winter months or migration periods, provided snow depths allow for adequate movement.

The proposed development is located predominantly in the southern half of the Property to replace and improve existing infrastructure and cluster development to leave the northeastern corner undeveloped. As shown in Table 4, the preliminary site plan will impact primarily previously disturbed areas and disturbed grassland, with 0.94 acres of impacts in the open coniferous forest (ordinal ranking 5), 0.31 acres of impacts within mesic grassland (ordinal ranking 3), and 0.22 acres of impact within mesic shrub habitat (ordinal ranking 5). No impacts are proposed in the scrub-shrub wetland habitat that could serve as suitable winter habitat for moose. Impacts to mesic shrub habitat, which may be used by mule deer or elk, are minimal. The open coniferous forest within the Property is characterized by significant existing use and minimal understory, making it unlikely to provide valuable habitat for species protected by Teton County.

Table 4. Proposed impacts to vegetative cover types within the preliminary site plan and the proposed LOD

COVER TYPE (Ordinal Ranking)	POTENTIAL IMPACTS WITHIN THE PRELIMINARY SITE PLAN (AC)	PROPOSED IMPACTS WITHIN THE LOD (AC)
Mesic Shrub (5)	0.22	2.85
Coniferous Forest (5)	0.94	3.74
Mesic Grassland (3)	0.31	1.22
Disturbed Grassland (1)	1.74	4.45
Disturbed (1)	1.54	3.66
TOTAL	**4.75**	**15.92***

* The 15.92 acres include areas where non-compliant buildings and roads will be reclaimed to native vegetation. The majority of the LOD will be reclaimed with an estimated 4.75 ac of permanent impacts, 1.16 acres to high

ranking habitat. Existing vegetation within the LOD will be preserved as much as possible while allowing for construction and WUI compliance.

The proposed Limits of Disturbance (LOD) define the final area within which all development, structure removal, and reclamation activities will occur. Impacts will primarily affect disturbed grassland, existing developed areas, and coniferous forest requiring defensible space for fire mitigation around the proposed structures. While 2.85 acres of mesic shrub habitat are proposed to be impacted, much of this constitutes temporary impacts that will be reclaimed. Additionally, approximately 5 acres of currently developed or disturbed grassland areas will be reclaimed with native vegetation, enhancing their ecological value for Teton County-protected species. Reclamation efforts will include a mesic shrub seed mix with sagebrush and native grass species, and select areas will be planted with trees and tall native shrubs.

Although the removal of mesic shrub and coniferous forest cover may reduce habitat available to protected wildlife species, the proposed development will remove structures and activities within the Granite Creek setback, remove existing structures and debris within the conifer forest, clustering new development in the southern half of the Property and leaving the northern half more open for wildlife use. A Reclamation and Habitat Enhancement Plan will be prepared to ensure that the final habitat cover types are not expected to differ significantly in quality or value from the existing habitat. This plan will be submitted to Teton County with subsequent development permits, providing precise quantification of habitat impacts and detailing how low-quality habitat areas will be converted to higher-value habitats through reclamation efforts.

The proposed development is well outside the 660-foot buffer for bald eagle nests. While the Property does not qualify as crucial nesting or wintering habitat, the proposed vegetation impacts will not remove any trees that bald eagles might use for roosting, foraging, or nesting. Furthermore, the riparian forest along the Granite Creek corridor, located away from existing development, provides ample roosting opportunities for bald eagles. As a result, the proposed development is unlikely to significantly degrade bald eagle habitat.

According to Teton County LDRs, no physical development is allowed within 150 feet of natural waterbodies that provide spawning habitat for cutthroat trout unless the applicant can demonstrate that there will be no runoff from the development and that disturbance to spawning habitat will be avoided (Div. 5.2.1.G.5. *Cutthroat Trout Spawning Areas*). Alder observed cutthroat trout spawning habitat in Granite Creek. The preliminary site plan proposes impacts within 150 feet of Granite Creek, where the access road will be rerouted farther from the creek, but still within the 150-foot buffer. Proposed impacts within the LOD include the removal of existing structures, which will be reclaimed with native vegetation. The development area is set apart from the Granite Creek channel by a wetland and riparian area that lies within the floodplain, which is more than 10 feet lower than the upland area where the development is proposed. The proposed development area is flat and situated at a higher elevation than the creek, ensuring that no runoff will impact Granite Creek. The landowner will require the contractor to implement best management practices (BMPs) to prevent runoff from entering the Granite Creek riparian corridor, and these precautions will be documented in subsequent Grading and Erosion Control permits. The proposed impacts do not pose a threat to the water quality of Granite Creek.

Table 5. 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	Proposed development area in coniferous forest and mesic shrub (Fig 5)	None (No WGFD designated crucial winter habitat)

HABITAT IMPACTS	DEVELOPMENT IMPACTS	DESCRIPTION OF AREA	PROTECTED HABITAT IMPACTED
Areas impacted, degraded or fragmented to the extent they no longer support long-term use by protected species	No	Wildlife species are already more likely to select for adjacent habitat that is further from development.	None (No WGFD designated crucial winter habitat)
Areas unaffected by proposed development where the quality of wildlife habitat is maintained	No	Scrub-shrub wetland, emergent wetland, mesic shrub, coniferous forest located outside of the proposed development. Reclamation where existing structures will be removed will also create additional valuable habitat	None (No WGFD designated crucial winter habitat)
Areas enhanced as wildlife habitat relative to current conditions	Yes	Reclamation where existing structures will be removed will create additional valuable habitat. Exact areas will be documented in a future plan to Teton County	None (No WGFD designated crucial winter habitat)
Areas where development poses a threat to the water quality of protected waterbodies and wetlands	No	Existing non-compliant structures and road will be removed within the Granite Creek and wetland setbacks. BMPs will be applied to avoid any runoff.	None
Locations where protected species may be displaced by proposed development and the new location's habitat suitability for survival of affected species	No	Wildlife may temporarily avoid the area during construction	None (No WGFD designated crucial winter habitat)

PROJECT VICINITY IMPACT STATEMENT

The Property is surrounded to the north and west by the Bridger Teton National Forest (BTNF), and these public lands adjacent to the Property consist of the Granite Creek corridor, valley bottom, and grassy and shrubby slopes leading up to forested mountainsides. The only adjacent development on the national forest land is a trailhead and Granite Rd. To the east and south of the Property, additional residential inholding lots are found ranging from 2 to 86 acres. These lots contain a range of undeveloped habitat similar in cover to that found on the Property – a mix of grassland, mesic shrub, and coniferous forest, while several contain a few residential buildings and access roads.

Generally, the area surrounding the Property is characterized by low development and ample valuable mid to high elevation habitat. The proximity to protected lands and low density lots provides wildlife movement corridors through and around the Property. 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 the current use and disturbance on the Property as well as

the proximity to protected and intact valuable habitat. Future development on private, unprotected lands in the vicinity has the potential to cause additional fragmentation of 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 – Outdoor lighting should be designed to downcast and follow the recommendations for Teton County's Dark Skies Initiative. 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.

Pet Control – Pets on the Property shall be contained in a designated, enclosed area and taught to not chase wildlife in accordance with Teton County Land Development Regulations for properties located in the NRO (Section 5.2.1.H.1, *Domestic Pets*). The proximity of this Property to the Snake River Corridor and big game use areas supports the idea that even after development, the Property will remain important to wildlife. Uncontrolled pets (particularly dogs) that chase and harass wildlife have a detrimental effect on wildlife's survivability and use of an area.

Bear Conflicts – The Property is not depicted within the designated Bear Conflict Priority Areas, but meets the definition as defined in the LDRs (Sec. 5.2.2.B.1), "adjacent to, or are in close proximity to, known bear-occupied habitat and/or regular travel corridors and/or seasonal bear-use areas". Therefore, all bear conflict mitigation regulations must be followed (such as bear resistant garbage containers, bird feeder protocols, pet control and no outside storage of bear attractants) (Section 5.2.2. *Bear Conflict Area Standards*).

Wildlife Friendly Fencing – All fences on the Property should be wildlife friendly with the exception of a pet yard enclosure. 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 boundary fence is installed or replaced, it should be converted to a wildlife friendly fence. Guidelines outlined in Teton County's Land Development Regulations (Section 5.1.2, *Wildlife Friendly Fencing*) and in *A Landowner's Guide to Fences and Wildlife: Practical Tips to Make Your Fences Wildlife Friendly* (Paige, 2012) should be followed.

MITIGATION AND RECLAMATION

If Teton County designates that the Property is not and should not be included in the NRO, mitigation for impacts to higher value habitat are not required. However, if Teton County concludes that mitigation shall be required to impacts within higher value habitat types including mesic shrub and coniferous forest, ample opportunity exists on the Property for enhancing existing mesic grassland, disturbed grassland, and disturbed areas to increase availability of high value wildlife habitat.

Significant portions within the LOD, including where disturbance will be temporary and where existing structures or failing infrastructure will be removed, will be reclaimed to native vegetation. Given the extent of these reclamation areas, the size and location of the Property, and the scale of proposed development as allowed under the existing CUP, a Reclamation and Habitat Enhancement Plan will be developed by a qualified environmental professional. The aim of this plan is to provide documentation to Teton County of precise permanent impacts and where temporary impacts or existing development will be removed and restored, and to provide detailed methods and standards for ensuring that appropriate native species are planted and that revegetation is successful. Reclamation will be designed to provide buffers around proposed development and to provide enhanced habitat that will be valuable for Teton County protected wildlife species. The plan will also include an assessment of tree removal required for Wildland Urban Interface (WUI) defensible space compliance. Additionally, it will establish maintenance and monitoring guidelines to ensure successful establishment and sustainability.

SUMMARY

The Property has been evaluated in accordance with Teton County's definition of the Natural Resources Overlay (NRO), with findings presented in this Environmental Analysis (EA). The analysis was conducted by Alder using Wyoming Game and Fish Department (WGFD) designated crucial habitat mapping as a primary resource, complemented by field data, scientific literature, and aerial imagery.

The Property is situated in a remote location, surrounded by national forest, and holds value for wildlife. It provides seasonal and winter habitat for wildlife; however, under Teton County's Land Development Regulations (LDRs), the habitat within the Property does not meet the criteria for critical natural areas that are essential to the survival of specific wildlife species or ecosystems.

This analysis is intended to provide an objective and thorough evaluation of the Property, serving as a reference for further interpretation and decision making.

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APPENDIX A: FIGURES

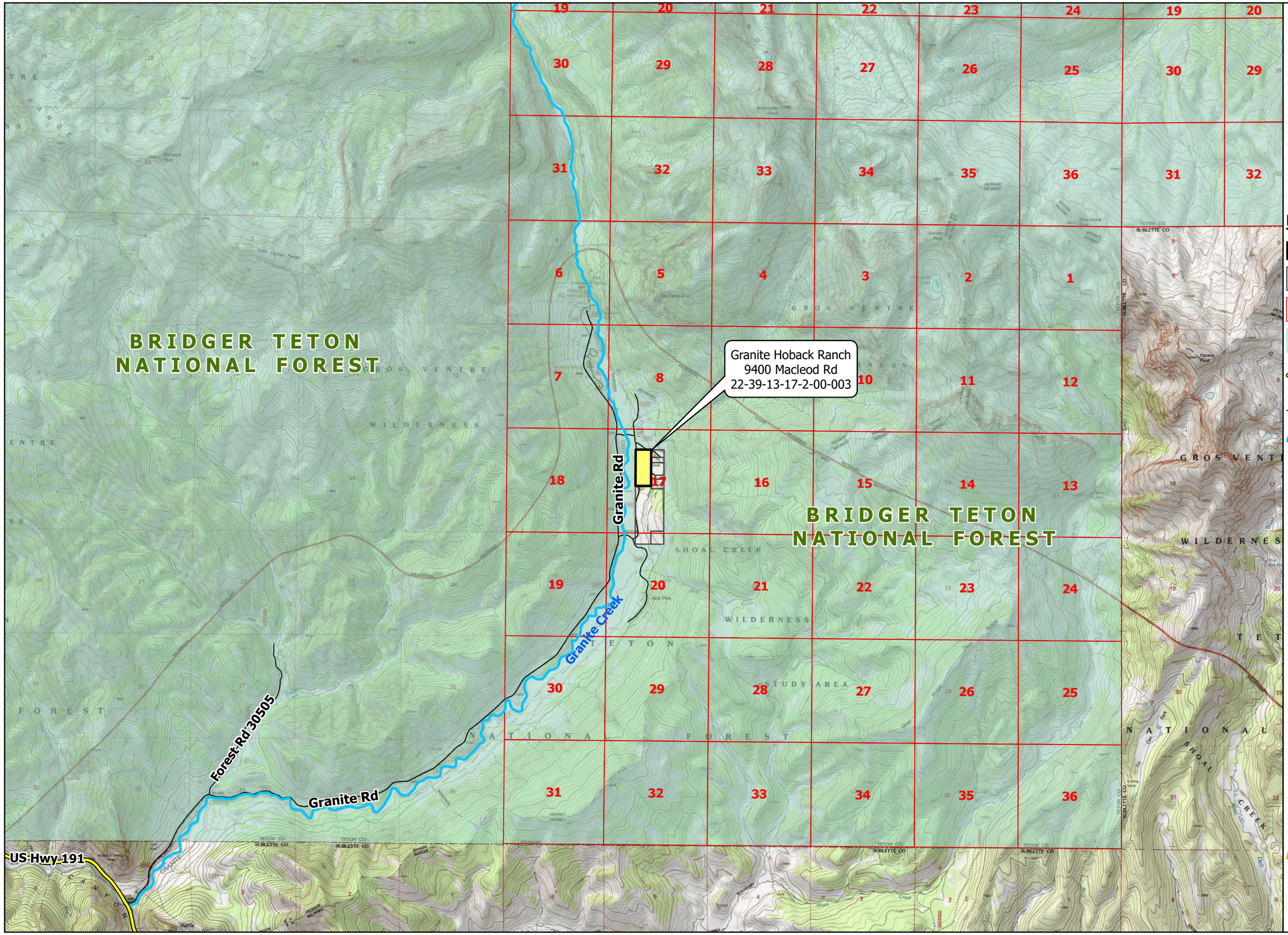

FIGURE 1

Location

ENVIRONMENTAL ANALYSIS

Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

Legend

- Subject Property
- Lots and Parcels
- PLSS Section Lines
- National Forest
- State and County Roads
- County Roads
- Surface Water Line

Sources

TETON COUNTY
- State and County Roads
- PLSS Section Lines

ENCLOSURE SURVEYING
- Ownership Boundaries

TETON CONSERVATION DISTRICT (TCD)
- Surface Water Inventory (SWI)

ESRI
- Topography

1 inch = 4,500 ft

0 1,125 2,250 4,500 Feet

January 28, 2025

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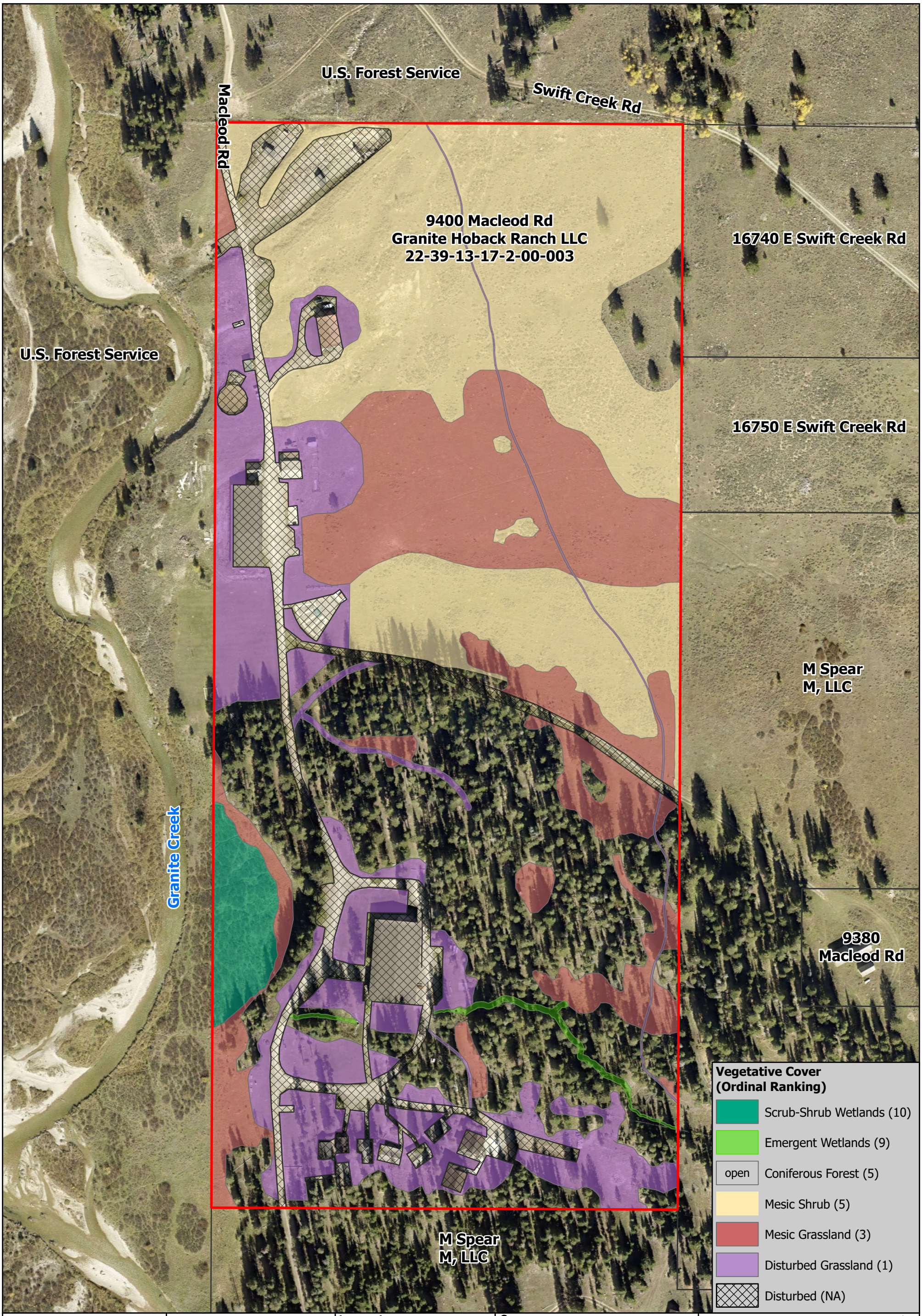

FIGURE 2

Vegetative Cover

ENVIRONMENTAL ANALYSIS
Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

January 28, 2025

Legend

Subject Property

Lots and Parcels

Sources

TETON COUNTY
- Aerial Imagery, 2022
ENCLOSURE SURVEYING
- Ownership Boundaries
ALDER ENVIRONMENTAL
- Wetland Delineation and Vegetation Inventory (9/5 & 10/3/2024)

1 inch = 150 ft

0 75 150 Feet

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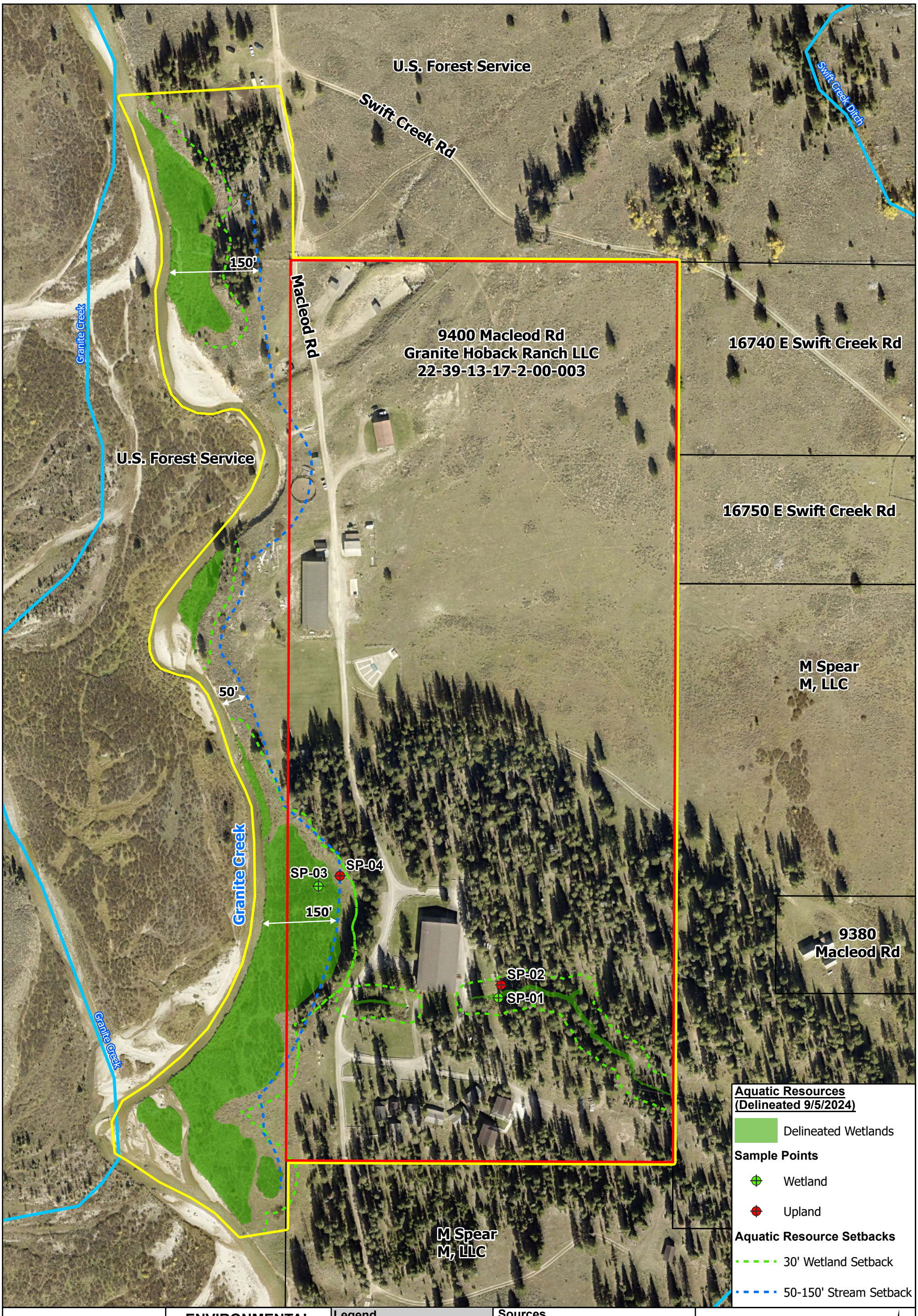

FIGURE 3

Aquatic Resources and Setbacks

ENVIRONMENTAL ANALYSIS
Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

January 28, 2025

Legend

- Subject Property
- Lots and Parcels
- ARI Study Area
- Surface Water Line

Sources

TETON COUNTY
- Aerial Imagery, 2022

ENCLOSURE SURVEYING
- Ownership Boundaries

ALDER ENVIRONMENTAL
- Wetland Delineation and Vegetation Inventory (9/5 & 10/3/2024)

TETON CONSERVATION DISTRICT (TCD)
- Surface Water Inventory (SWI)

1 inch = 180 ft

Feet
0 90 180

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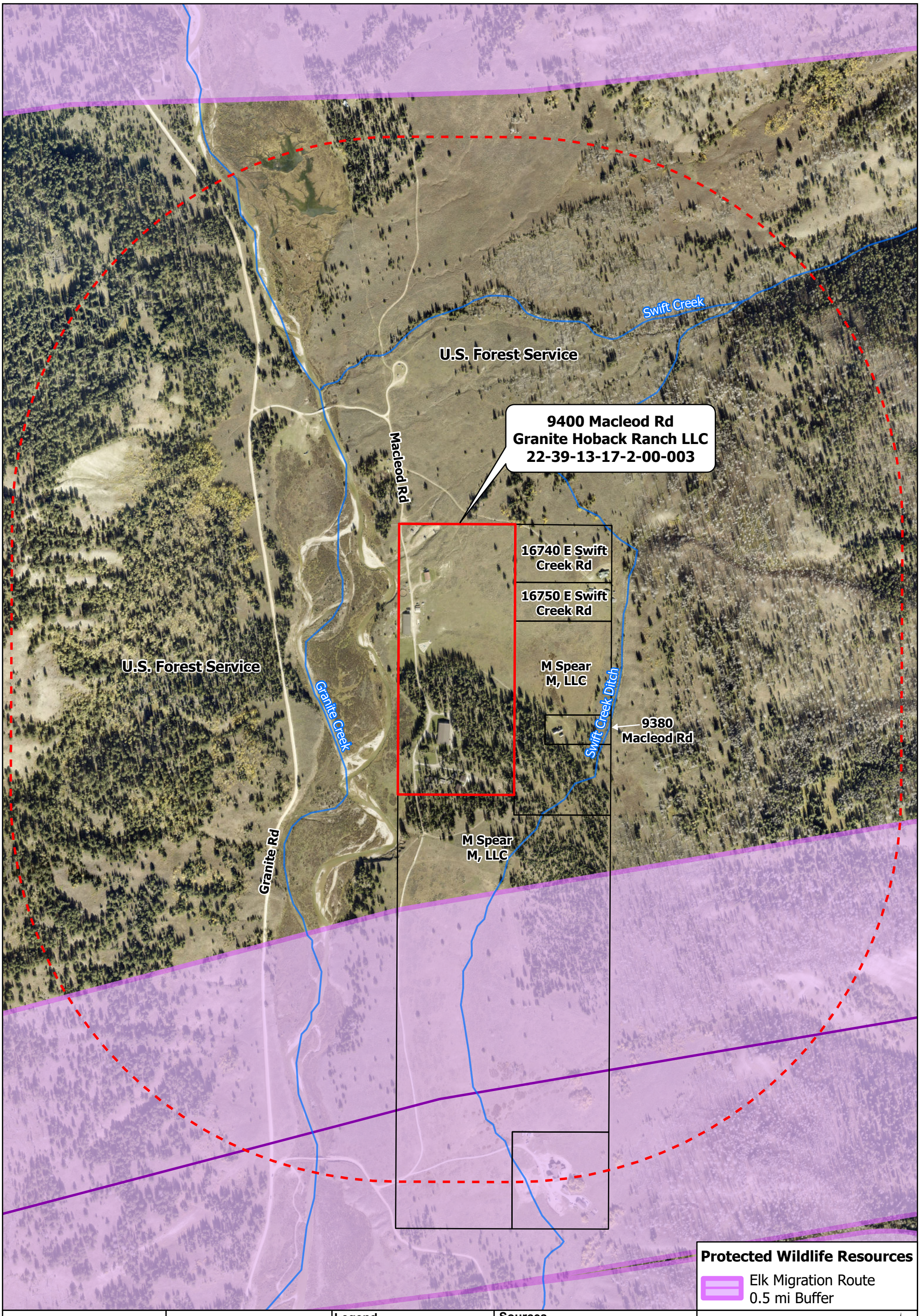

FIGURE 4

Protected Wildlife Resources & Buffers

ENVIRONMENTAL ANALYSIS
Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

January 28, 2025

Legend

- Subject Property
- Lots and Parcels
- 0.5 Mile Buffer
- Surface Water (TCD)

Sources

TETON COUNTY
- Aerial Imagery, 2022

ENCLOSURE SURVEYING
- Ownership Boundaries

WY GAME AND FISH DEPT (WGFD)
- Elk Migration Corridors

TETON CONSERVATION DISTRICT (TCD)
- Surface Water Inventory (SWI)

1 inch = 600 ft

Feet
0 300 600

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US Forest Service

Swift Creek Rd

Macleod Rd

150'

LOD includes temporary construction storage and regrading. All impact areas, except for lawns, hardscapes, and structures, will be reclaimed and revegetated with native vegetation.

9400 Macleod Rd
Granite Hoback Ranch LLC
Parcel: 22-39-13-17-2-00-003

16740 E Swift Creek Rd

16750 E Swift Creek Rd

US Forest Service

LOD impacts within the wetland setback are for removing existing structures for compliance and restoring the area with native vegetation.

50'

M Spear M, LLC

Existing vegetation within the LOD will be preserved except where permanently impacted by site construction or WUI compliance

Granite Creek

150'

The LOD is expanded around proposed structures to establish defensible space per WUI requirements

LOD encroachments into the wetland setback are solely for reclaiming the existing road to achieve compliance

LOD encroachments into wetland setbacks are within the limits of existing roads

Areas of existing disturbance will be reclaimed with native vegetation

M Spear M, LLC

Vegetative Cover (Ordinal Ranking)

- Scrub-Shrub Wetlands (10)
- Emergent Wetlands (9)
- open — Coniferous Forest (5)
- Mesic Shrub (5)
- Mesic Grassland (3)
- Disturbed Grassland (1)
- Disturbed (NA)

Aquatic Resource Setbacks

- 30' Wetland Setback
- 50-150' Stream Setback

Proposed Activities

- Preliminary Site Plan
- Proposed Pond
- Proposed Lawn
- Proposed LOD

FIGURE 5

Proposed Activities

ENVIRONMENTAL ANALYSIS
Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

January 28, 2025

Legend

- Subject Property
- Lots and Parcels

Sources

TETON COUNTY
- Aerial Imagery, 2022

ENCLOSURE SURVEYING
- Ownership Boundaries

ALDER ENVIRONMENTAL
- Wetland Delineation and Vegetation Inventory (9/5 & 10/3/2024)
- Aquatic Resources Setbacks

CAIRN LANDSCAPE ARCHITECT
- Site Plan

1 inch = 150 ft

0 75 150 Feet

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APPENDIX B: PHOTOGRAPHS

Photo 1. View of the existing shop on the western edge of the Property that will be removed and reclaimed with native vegetation (10/3/2024).

Photo 2. View of the existing shooting infrastructure near the center of the Property that will be removed and replaced with the proposed habitat pond (10/3/2024).

Photo 3. View of existing shooting infrastructure on the northern end of the Property (10/3/2024). Existing structures will be removed and this area will be re-graded with more natural slopes and reclaimed with native grasses and used for shooting sports.

Photo 4. Looking at mesic shrub (sagebrush) habitat near the center of the Property, facing southwest with existing structures in the background, these structures are to be removed and reclaimed (10/3/2024).

Photo 5. View of mesic grassland habitat near the center of the Property and adjacent to the existing two-track that traverses the Property from west to east (10/3/2024).

Photo 6. Showing an existing shooting structure that are present within the open coniferous forest on the southern half of the Property (10/3/2024). This structure will be removed.

Photo 7. Looking at the existing lodge, which has a protective structure built over it due to a failing roof. In the foreground is the existing road, and disturbed grassland (10/3/2023).

Photo 8. View from within the coniferous forest habitat, showing the open nature of the forest and sparse understory vegetation (10/3/2024).

Photo 9. The existing cabins on the southern end of the Property, with disturbed grassland in the foreground (10/3/2024).

Photo 10. Looking at the emergent wetland swale on the southern end of the Property where water pools during spring runoff. The existing lodge is visible in the background (10/3/2024).

Photo 11. Looking at Granite Creek just west of the Property on the northern end, with the existing maintenance building in the background (10/3/2024). The majority of the Property sits at an elevation well above the Granite Creek channel.

Photo 12. Showing the scrub-shrub wetlands associated with Granite Creek that are in the west central part of the Property (10/3/2024).

APPENDIX C: AQUATIC RESOURCES INVENTORY

Aquatic Resources Inventory

Wetland Delineation

Granite Hoback Ranch
9400 Macleod Rd
Hoback, WY

Located: PT. H.E.S. 220, Section 17, Township 39 N, Range 113 W
Parcel: 22-39-13-17-2-00-003

January 28, 2025

Prepared for:
Granite Hoback Ranch LLC
7901 Southpark Plaza, Suite 206
Littleton, CO 80120-4505

Prepared by:

ALDERENVIRONMENTAL
water | wetlands | ecological consulting
Jackson, WY alderenvironmental.com

TABLE OF CONTENTS

INTRODUCTION

Alder Environmental, LLC (Alder) was retained by Granite Hoback Ranch LLC to provide wetland consulting services to delineate wetlands on 9400 Macleod Rd, along Granite Creek in Hoback, Teton County, WY (the Property, Appendix A – Figure 1). Alder conducted an Aquatic Resources Inventory (ARI) to delineate wetlands by collecting wetland characteristic information including vegetation, soils, and hydrologic conditions on the Property (Appendix A – Figure 2). The ARI was prepared by Hannah Cangilla and Stephanie Dykema, *Certified Wetland Delineators*, with Alder Environmental.

STUDY AREA LOCATION

The ARI was conducted within the 33.64-acre Property and a portion of the adjoining U.S. Forest Service land surrounding Granite Creek, in Teton County, WY (Appendix A – Figure 2). The Aquatic Resources Study Area encompassed 43.7 acres.

Directions to Study Area

From Jackson, WY, head south onto Highway 189 for 12 miles. At the roundabout in Hoback Junction, head east on Highway 191, continue for 11 miles. Turn north onto Granite Road and continue for 7 miles, then turn right on Granite Creek Trailhead. Turn right onto Sage Meadow Road, which will split. Take the right fork of Macleod Road to arrive at the Property.

Public Land Survey System

PT. H.E.S. 220, Section 17, Township 39 N, Range 113 W

Study Area

The Study Area comprises the entire 33.64-acre Property and extends west to the centerline of Granite Creek within the US Forest Service land. The Study Area was expanded beyond the Property to determine the extent of scrub-shrub wetlands within the Granite Creek floodplain and the resulting setbacks which affect the re-development plan of the Property.

METHODS

This ARI was completed according to a USACE Wyoming Regulatory Office *Aquatic Resources Inventory Guidance* memo dated May 10, 2011. The ARI included a routine wetland delineation conducted in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual* and *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (version 2).*

Preliminary data (described below) was reviewed prior to the onsite inventory conducted on September 5, 2024. Four (4) sample points were selected as necessary to identify various vegetative communities and topographic positions found in the Study Area (Appendix A – Figure 2). Digital photos were taken to document sample points and aquatic resources (Appendix B). The *U.S. Army Corps of Engineers 2016 National Wetland Plant List, version 3.2* website (http://wetland_plants.usace.army.mil/) and the *National Wetland Plant List*: *2016 Update of*

Wetland Ratings (Lichvar, 2016) were used as references for vegetation wetland indicator status.

Maps were prepared using ArcGIS Pro 3.4.0 in the following datum and coordinate system: NAD_1983_StatePlane_Wyoming_West_FIPS_4909_Feet. The geographic locations of the sample points and wetland boundaries were collected using a Geode GPS unit and an iPad Tablet (Appendix A – Figure 2).

EXISTING INFORMATION REVIEW

The following existing site information was initially reviewed to determine the presence or absence of aquatic resources in the Study Area and to understand the resources within the vicinity (Appendix A – Figure 1).

National Wetlands Inventory (NWI)
The NWI map layer is intended to be used as an indicator of possible wetlands. One feature, classified as Riverine, Intermittent, Streambed, Seasonally Flooded (R4SBC), traverses the southern portion of the Study Area from east to west. Palustrine, Scrub-Shrub, Seasonally Flooded wetlands and Palustrine Emergent, Persistent, Seasonally Flooded wetlands are present in the western portions of the Study Area within the Granite Creek floodplain.

National Hydrography Dataset (NHD) & Teton Conservation District (TCD) Surface Water Inventory (SWI)
The U.S. Geological Survey National Hydrography Dataset (NHD) GIS depicts two unnamed watercourses that traverse the Property from east to west, one is categorized as an intermittent stream and the other a connector. The NHD dataset also depicts the perennial Granite Creek centerline within the ARI Study Area (Appendix A – Figure 2).

Between 2015 and 2019, the Teton Conservation District (TCD) collected comprehensive hydrographic data to accurately inventory and classify surface waters throughout the county. The resulting Surface Water Inventory (SWI) illustrates one flowline within the Study Area, represented by Granite Creek flowing north to south adjacent to the Property boundary within the Study Area (Appendix A-Figure 1).

Soil Survey
See Appendix D for USDA Soil Survey. No soil survey data is digitally available for this area.

Aerial Imagery
Teton County aerial imagery of the Property from 2022 displays existing development with a matrix of mixed conifer forest and open shrub and grassland. MacLeod Road accesses the Property from the north and from the south, and driveways provide access to the primary and ancillary buildings on the Property. Openings throughout the forest indicate previous use, clearing and disturbance.

GENERAL DESCRIPTION OF STUDY AREA

Land Use and Property History

Historical imagery and County Planning and Building records indicate development occurring on the Property dating back to 1994. Settlement and development on the Property is likely to have occurred earlier, however the written record does not contain additional development application records prior to 1994. Availability of historical aerial imagery from the Teton County Map Server is limited given the remote nature of the Property location; available imagery includes black and white imagery from 1994, 1 meter resolution color imagery from 2012, 6-inch resolution imagery from 2015 and 3-6inch resolution imagery from 2022. In reviewing the available imagery, the surrounding land cover has remained mostly unchanged over time. There have been very minor changes in the forest composition, with small clearings appearing over time.

Hydrologic Influences

The main hydrologic influences within the Study Area are the seasonal groundwater table fluctuations, due to the Study Area's location relative to the Granite Creek floodplain, and seasonal surface flows into a wetland swale from spring snowmelt. During the site visit, Alder did not identify any waterbodies within the Property boundary. As depicted in Figure 1, the braided channel of Granite Creek and its associated riparian corridor borders the Property boundary to the west.

Topography

The Study Area is topographically characterized by a typical floodplain cross section including a large alluvial upland bench rising approximately 15 feet above the floodplain of Granite Creek with elevations in the Study Area ranging from 6,748-6,810 ft AMSL. The topography above the floodplain is generally flat with gentle slopes with a gradient from northeast to southwest towards Granite Creek.

WETLAND DELINEATION

Alder conducted a wetland delineation within the Study Area on September 5, 2024. A total of two (2) wetland and two (2) non-wetland (upland) sample points were used to delineate 3.77 acres of wetlands within the larger 43.7-acre Study Area (Appendix A – Figure 2). Within the 33.6-acre Property boundary specifically, 0.13-acres of emergent wetland and 0.49-acres of scrub-shrub wetlands were delineated. The emergent wetland swale was surrounded by upland forested areas; however, the wetland was determined to be emergent based on the herbaceous vegetation within the wetland planes.

Photos of the wetlands and sample points are provided in Appendix B. The Wetland Determination Sample Point Data Forms are provided in Appendix C. The following describes the vegetation, soils, and hydrology of these aquatic sites and adjacent uplands.

Vegetation

Plant species and their percent cover were recorded for each vegetative stratum using a 30-foot radius for trees and woody vines, a 15-foot radius for shrubs, and a 5-foot radius for herbaceous plants. Each species' wetland indicator status was recorded based on its listing in the Wyoming 2016 Final State Wetland Plant List (Lichvar 2016). All sample

points had the dominance test and prevalence index performed to determine if hydrophytic vegetation was present to satisfy the wetland criteria.

Three sample points (SP-1, SP-2, and SP-3) qualified for hydrophytic vegetation communities. The dominant plant species observed at wetland and upland sample points are listed in Table 1.

TABLE 1. DOMINANT PLANT SPECIES OBSERVED AT SAMPLE POINTS

Scientific Name	Common Name	Wetland Indicator Status	Dominant at Wetland Sample Points	Dominant at Upland Sample Points
Shrub				
Artemisia tridentata	Big sagebrush	UPL		X
Salix bebbiana	Gray willow	FACW	X	
Salix boothii	Booth's willow	FACW	X	
Salix glauca	Gray-leaf willow	FACW	X	
Salix geyeriana	Geyer's willow	FACW	X	
Herbaceous				
Agrostis stolonifera	Spreading bentgrass	FAC		X
Carex nebrascensis	Nebraska sedge	OBL	X	
Carex utriculata	Northwest territory sedge	OBL	X	
Cirsium arvense	Canada thistle	FAC		X
Equisetum arvense	Field horsetail	FAC	X	
Equisetum laevigatum	Smooth scouring rush	FACW		X
Geum macrophyllum	Large-leaf avens	FAC	X	
Glyceria striata	Fowl manna grass	OBL	X	
Heracleum maximum	American cow-parsnip	FAC	X	
Micransthese odontoloma	Streambank pseudosaxifrage	FACW	X	
Phleum pratense	Common timothy	FAC	X	X
Poa pratensis	Kentucky bluegrass	FAC		X
Rudbeckia occidentalis	Western coneflower	FAC	X	
Rumex salicifolius	Willow dock	FACW	X	
Solidago canadensis	Canadian goldenrod	FACU		X

Soils

Soils within the Study Area were examined at each sample point through a feel and appearance method, using the Munsell Soil Color Charts and Pocket Guide to Hydric Soil Field Indicators, and were recorded in the wetland determination data forms provided in Appendix C. Soil textures and observed hydric soil indicators are listed in Table 2.

TABLE 2. SOILS OBSERVED AT SAMPLE POINTS

Sample Point	Soil Texture	Color Matrix	Redox Present w/in 8 in	Hydric Soil Indicator	Wetland
SP-1	Clay loam, Sandy clay loam	10YR 4/2, 10YR 5/2	Yes	Depleted Matrix (F3)	Yes
SP-2	Sandy clay loam	10YR 3/2	No	None	No
SP-3	Clay loam, Silty Clay	10YR 2/2, 10YR 4/2	Yes	Depleted Matrix (F3)	Yes
SP-4	Clay loam	10YR 3/3	No	None	No

Hydrology

Wetland hydrology was present at sample points SP-1 and SP-3. The primary and secondary wetland hydrology indicators for each sample point are listed in Table 3.

TABLE 3. WETLAND HYDROLOGY INDICATORS AT SAMPLE POINTS

Sample Point	Primary Wetland Hydrology Indicators	Secondary Wetland Hydrology Indicators
SP-1	None	Dry-Season Water Table (C2), Geomorphic Position (D2), FAC-Neutral Test (D5)
SP-2	None	None
SP-3	None	Water-Stained Leaves (B9), Dry-Season Water Table (C2), FAC-Neutral Test (D5)
SP-4	None	FAC-Neutral Test (D5)

AQUATIC RESOURCES SUMMARY

The following is a summary table of Alder's findings within the 43.7-acre Study Area; aquatic resources are mapped in Figure 2 (Appendix A). One (1) sample point was located within emergent wetlands (SP-1) and one (1) was located within scrub-shrub wetlands (SP-3). Two (2) sample points were located within uplands (SP-2, SP-4). Alder delineated a total of 3.77 acres of wetlands within ARI Study Area (Appendix A – Figure 2). Within the 33.6-acre Property boundary specifically, 0.13-acres of emergent wetland and 0.49-acres of scrub-shrub wetlands were delineated.

TABLE 4. AQUATIC RESOURCE SUMMARY TABLE FOR THE STUDY AREA

Unique Feature Label	Sample Point ID	Aquatic Resource Type	Cowardin Classification	Total Area (acres)	Area within Property boundary (acres)	Comments	Photo Numbers
W1	SP-1	Palustrine emergent wetland	PEM1C	0.13	0.13	Emergent wetland within a swale, lacks connectivity with Granite Creek	1, 2, 10
W2	SP-3	Palustrine scrub-shrub wetland	PSS1C	3.65	0.49	Scrub-shrub wetlands within the Granite Creek floodplain	5, 6, 9

REFERENCES

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U.S.D.I. Fish and Wildlife Service, Washington, D.C.

Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Technical Report Y87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2016. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.

U.S. Army Corps of Engineers 2016. National Wetland Plant List, version 3.3 U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH. http://wetland_plants.usace.army.mil/

U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USDA-NRCS. 2014. Custom Soil Resource Report for Teton County, Wyoming. NRCS Web Soil Survey. December 1, 2016. United States Department of Agriculture Natural Resources Conservation Service. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

USFWS. 2012. National Wetlands Inventory GIS data layer. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/

USGS. 2012. National Hydrography Dataset GIS data layer. U.S. Department of the Interior, United Geological Survey. http://nhd.usgs.gov. *Dataset* last modified on 11/5/2012.

Wetland Training Institute, Inc. 2011. Pocket Guide to Hydric Soil Field Indicators v. 7.0 Robert J. Pierce (ed). Wetland Training Institute, Inc., Glenwood, NM. 188+p.

APPENDIX A – MAPS

Figure 1. Existing Information
Figure 2. Aquatic Resources

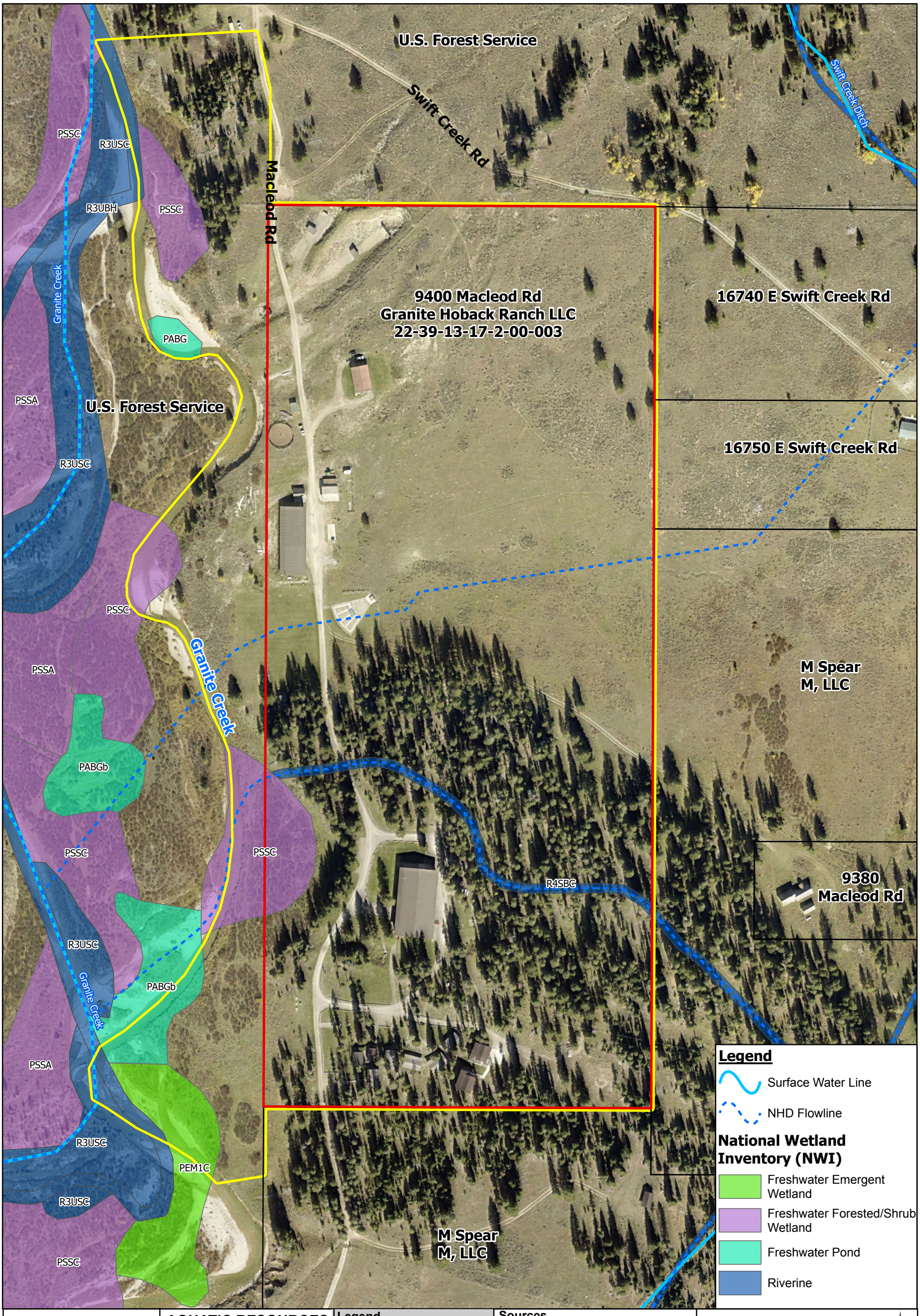

FIGURE 1

Existing Information

AQUATIC RESOURCES INVENTORY

Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

January 28, 2025

Legend

- Subject Property
- Lots and Parcels
- ARI Study Area

Sources

TETON COUNTY
- Aerial Imagery, 2022

ENCLOSURE SURVEYING
- Ownership Boundaries

TETON CONSERVATION DISTRICT (TCD)
- Surface Water Inventory (SWI)

US FISH AND WILDLIFE SERVICE
- NWI

US GEOLOGICAL SURVEY
- National Hydrography Dataset (NHD)

1 inch = 180 ft

0 90 180 Feet

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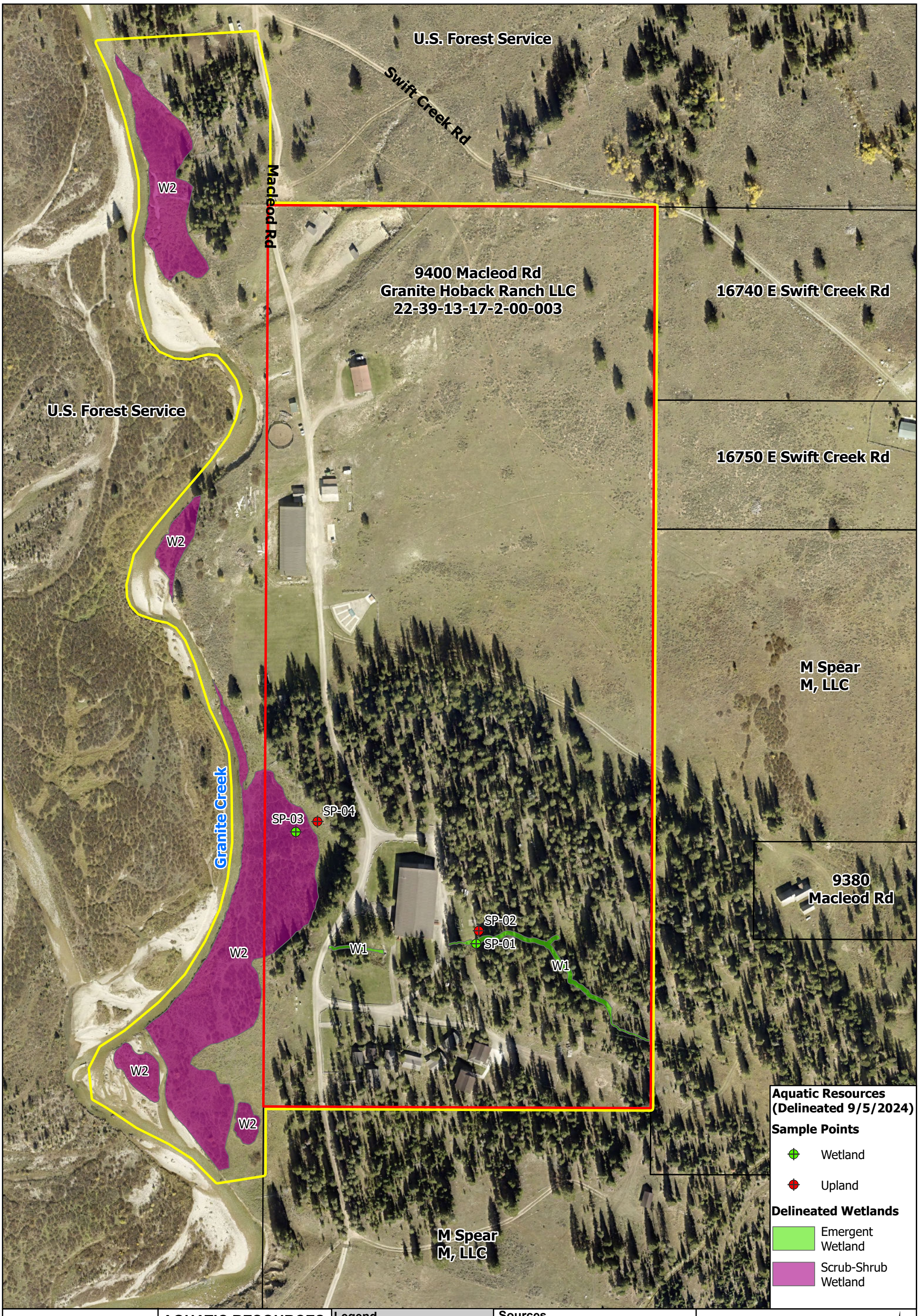

FIGURE 2

Aquatic Resources

AQUATIC RESOURCES INVENTORY

Granite Hoback Ranch
9400 Macleod Rd
Teton County, WY

January 28, 2025

Legend

- Subject Property
- Lots and Parcels
- ARI Study Area

Sources

TETON COUNTY
- Aerial Imagery, 2022

ENCLOSURE SURVEYING
- Ownership Boundaries

ALDER ENVIRONMENTAL
- Wetland Delineation (9/5/2024)

1 inch = 180 ft

0 90 180 Feet

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APPENDIX B – PHOTOS

Photo 1 (9/5/2024)- Wetland sample point (SP-1) landscape view. This sample point is located within an emergent wetland swale. This sample point contained hydrophytic vegetation, wetland hydrology and hydric soils. The swale was located within a forested upland with mature mixed species conifers composing the overstory.

Photo 2 (9/5/2024)- Wetland sample point (SP-1) soil profile.

Photo 3 (9/5/2024)- Upland sample point (SP-2) landscape view. This sample point is located above the wetland swale on a bench. This sample point contained hydrophytic vegetation, but lacked wetland hydrology and hydric soils.

Photo 4 (9/5/2024)- Upland sample point (SP-2) soil profile.

Photo 5 (9/5/2024)- Wetland sample point (SP-3) landscape view. This sample point is located within a scrub-shrub wetland located in the Granite Creek floodplain. This sample point contained hydrophytic vegetation, wetland hydrology and hydric soils.

Photo 6 (9/5/2024)- Wetland sample point (SP-3) soil profile.

Photo 7 (9/5/2024)- Upland sample point (SP-4) landscape view. This sample point is located on a slope above the Granite Creek floodplain. This sample point lacked hydrophytic vegetation, wetland hydrology and hydric soils.

Photo 8 (9/5/2024)- Upland sample point (SP-4) soil profile.

Photo 9 (9/5/2024)- Looking south from within the banks of Granite Creek, the scrub-shrub wetland (W2) is visible along the bank.

Photo 10 (9/5/2024)- Looking west from within the emergent wetland swale (W1). This culvert provides connectivity between the two segments of the wetland swale. Further downgradient to the west, this swale lacks connectivity with Granite Creek where it appears there was historic connectivity. This disconnection is a result of previous development of a driveway within the Property.

APPENDIX C – WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Granite Hoback Ranch City/County: Teton County Sampling Date: 2024-09-05

Applicant/Owner: Granite Hoback Ranch LLC State: Wyoming Sampling Point: SP-01

Investigator(s): S Dykema, H Cangilla Section, Township, Range: S17 T39N R113W

Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): E 43B Lat: 43.3424246 Long: -110.43536046 Datum: WGS 84

Soil Map Unit Name: NOTCOM - No Digital Data Available NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix boothii	15	✔	FACW
2. Salix geyeriana	10	✔	FACW
3. Abies lasiocarpa	5		FACU
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Micranthes odontoloma	20	✔	FACW
2. Rudbeckia occidentalis	15	✔	FAC
3. Equisetum arvense	10	✔	FAC
4. Geum macrophyllum	10	✔	FAC
5. Glyceria striata	10	✔	OBL
6. Heracleum maximum	10	✔	FAC
7. Phleum pratense	10	✔	FAC
8. Epilobium ciliatum	5		FACW
9. Urtica dioica	5		FAC
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	50	x 2 =	100
FAC species	60	x 3 =	180
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	125 (A)		310 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

SOIL

Sampling Point: SP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 4/2	100					Clay Loam	
6 - 18	10YR 5/2	60	2.5YR 3/6	40	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ✔ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Granite Hoback Ranch City/County: Teton County Sampling Date: 2024-09-05

Applicant/Owner: Granite Hoback Ranch LLC State: Wyoming Sampling Point: SP-02

Investigator(s): S Dykema, H Cangilla Section, Township, Range: S17 T39N R113W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): E 43B Lat: 43.34251064 Long: -110.43528921 Datum: WGS 84

Soil Map Unit Name: NOTCOM - No Digital Data Available NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____ No ✔	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 20 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Agrostis stolonifera	15	✔	FAC
2. Phleum pratense	15	✔	FAC
3. Poa pratensis	15	✔	FAC
4. Solidago canadensis	15	✔	FACU
5. Dactylis glomerata	10		FACU
6. Fragaria virginiana	10		FACU
7. Heracleum maximum	10		FAC
8. Equisetum arvense	5		FAC
9. Potentilla gracilis	5		FAC
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	100 (A)		335 (B)

Prevalence Index = B/A = 3.35

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: SP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 17	10YR 3/2	100					Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Granite Hoback Ranch City/County: Teton County Sampling Date: 2024-09-05

Applicant/Owner: Granite Hoback Ranch LLC State: Wyoming Sampling Point: SP-03

Investigator(s): S Dykema, H Cangilla Section, Township, Range: S17 T39N R113W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Linear Slope (%): 0

Subregion (LRR): E 43B Lat: 43.34306137 Long: -110.43672067 Datum: WGS 84

Soil Map Unit Name: NOTCOM - No Digital Data Available NWI classification: PSSC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix bebbiana	25	✔	FACW
2. Salix glauca	20	✔	FACW
3.			
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Carex utriculata	40	✔	OBL
2. Carex nebrascensis	30	✔	OBL
3. Rumex salicifolius	20	✔	FACW
4. Poa leptocoma	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	145 (A)		220 (B)

Prevalence Index = B/A = 1.51

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

SOIL

Sampling Point: SP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	98	10YR 6/8	2	C	M	Clay Loam	
4 - 18	10YR 4/2	70	5YR 5/8	30	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✔ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ✔ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Granite Hoback Ranch City/County: Teton County Sampling Date: 2024-09-05

Applicant/Owner: Granite Hoback Ranch LLC State: Wyoming Sampling Point: SP-04

Investigator(s): S Dykema, H Cangilla Section, Township, Range: S17 T39N R113W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): E 43B Lat: 43.34310664 Long: -110.43656573 Datum: WGS 84

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Artemisia tridentata	10	✔	UPL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Cirsium arvense	20	✔	FAC
2. Equisetum laevigatum	20	✔	FACW
3. Phleum pratense	20	✔	FAC
4. Poa pratensis	15		FAC
5. aster	15		
6. Potentilla gracilis	10		FAC
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	65	x 3 =	195
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	95 (A)		285 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

SOIL

Sampling Point: SP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 3/3	80					Clay Loam	30% cobbles and gravel
-								
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX D – SOIL SURVEY REPORT

United States Department of Agriculture

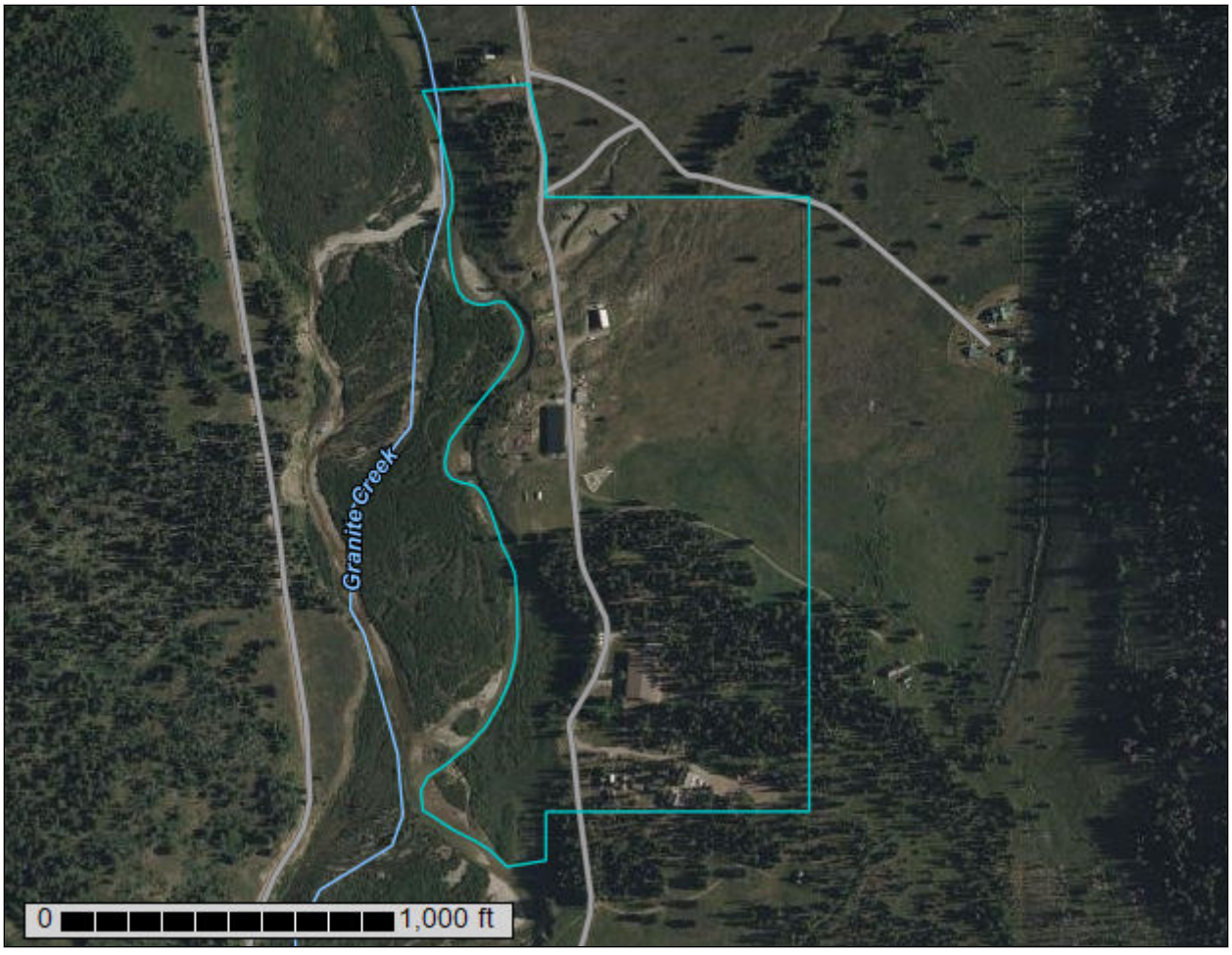
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

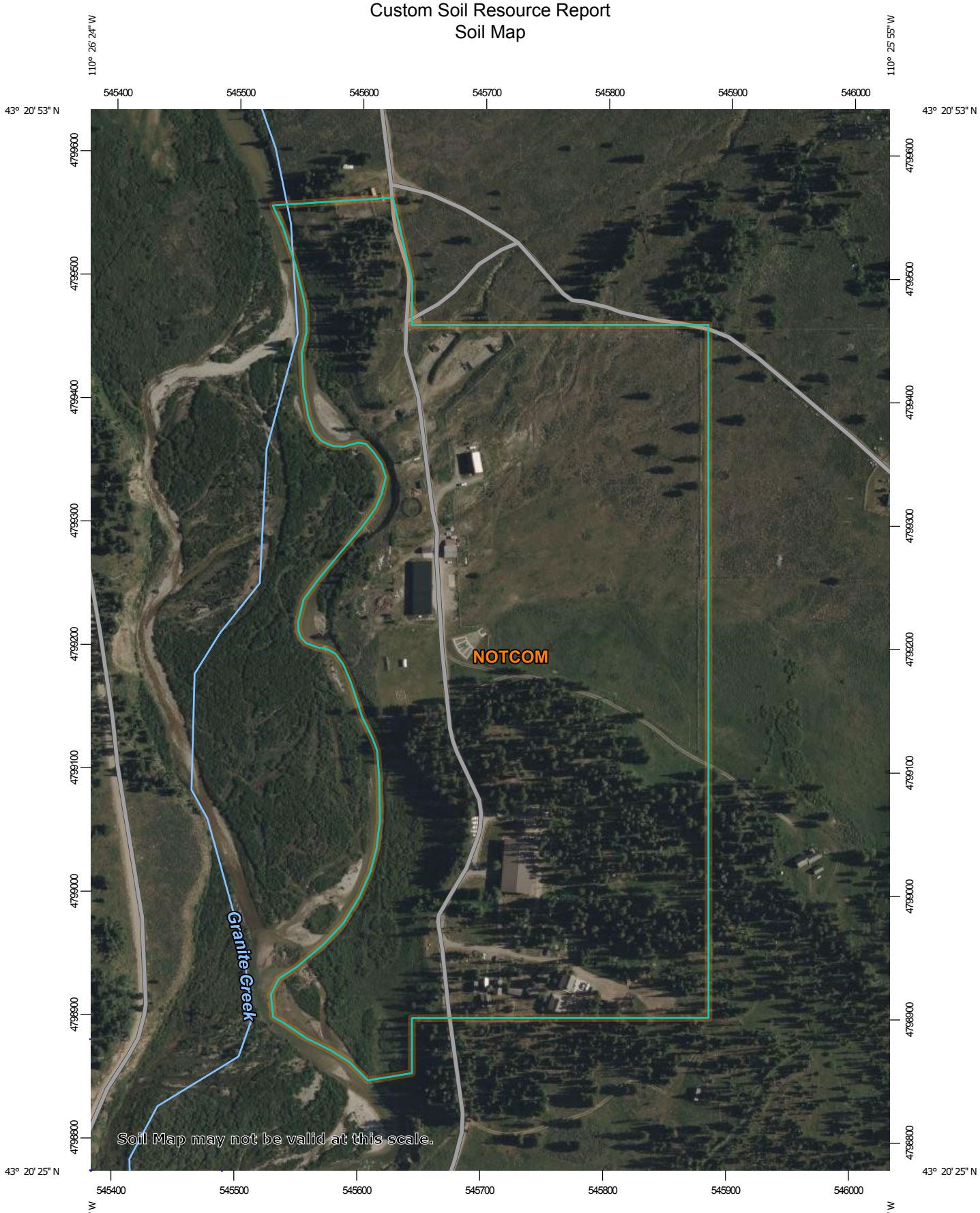
Custom Soil Resource Report for Teton National Forest, Wyoming, Parts of Teton, Fremont, Park, Sublette, and Lincoln Counties

Granite Hoback Ranches-9400 MacLeod Rd



January 28, 2025

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,190 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Teton National Forest, Wyoming, Parts of Teton, Fremont, Park, Sublette, and Lincoln Counties
Survey Area Data: Version 7, Sep 10, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2021—Jun 22, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	44.9	100.0%
Totals for Area of Interest		**44.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Teton National Forest, Wyoming, Parts of Teton, Fremont, Park, Sublette, and Lincoln Counties

NOTCOM—No Digital Data Available

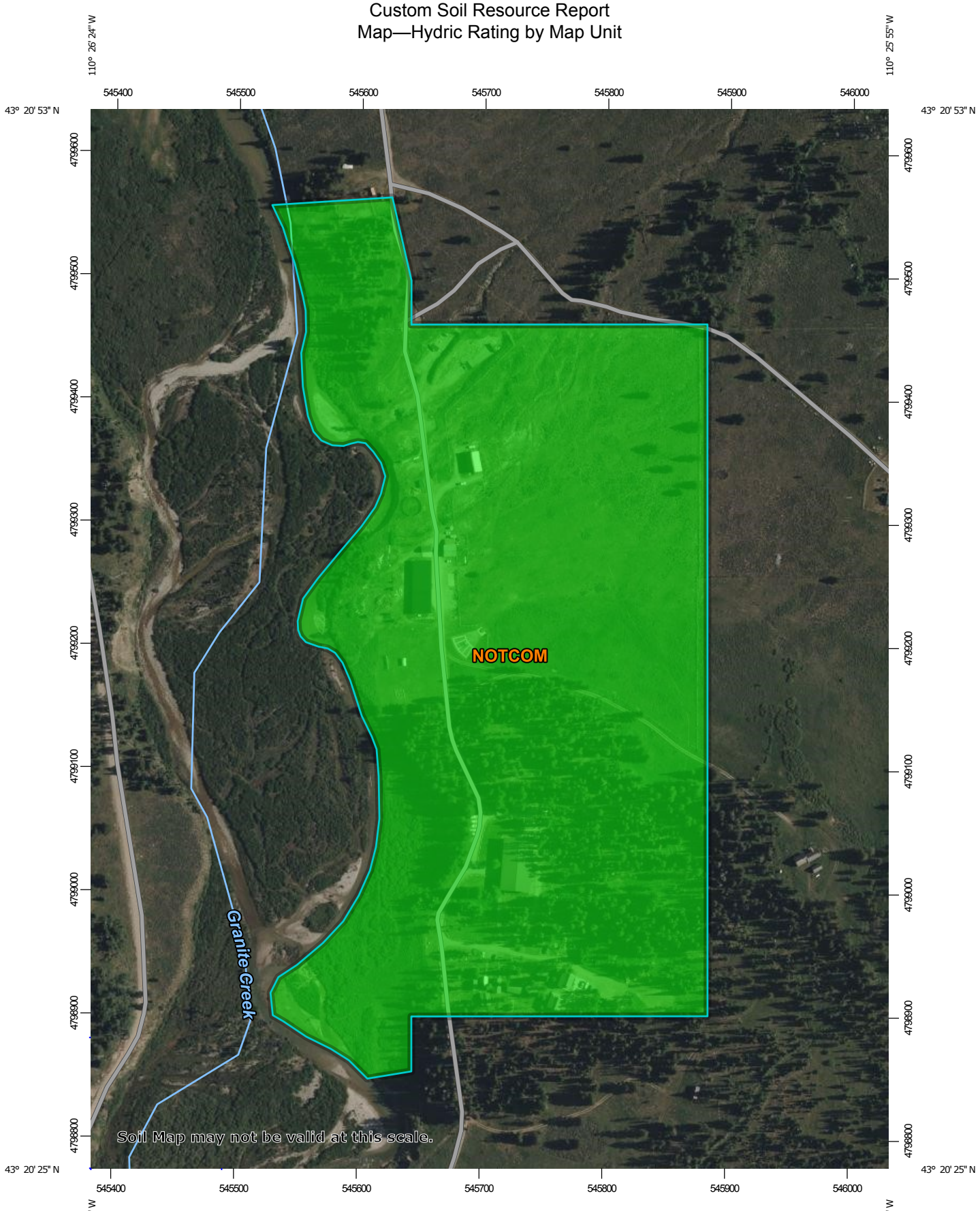
Map Unit Composition

Notcom: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

Custom Soil Resource Report
Map—Hydric Rating by Map Unit



Map Scale: 1:4,190 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Teton National Forest, Wyoming, Parts of Teton, Fremont, Park, Sublette, and Lincoln Counties
Survey Area Data: Version 7, Sep 10, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2021—Jun 22, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	0	44.9	100.0%
Totals for Area of Interest			**44.9**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower