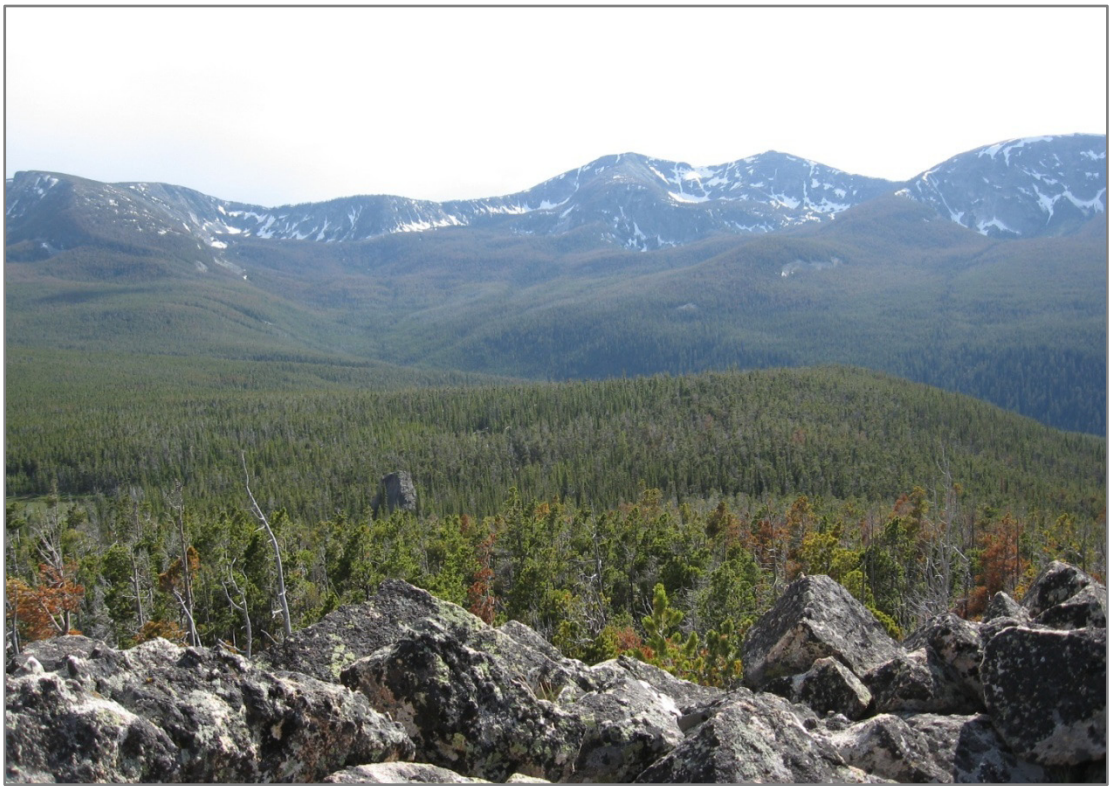
UPPER BIRCH CREEK RANCH



10/15/2009

Conservation Easement Documentation Report

Clearwater Wildland Services, LLC.
Seeley Lake, Montana
www.cwsmt.com

TABLE OF CONTENTS

BACKGROUND INFORMATION

A. Introduction

The Upper Birch Creek Ranch in Meagher County is a 1320 acre tract owned by Kevin Wetherell. Mr. Wetherell is interested in putting this Property in a Conservation Easement with the Rocky Mountain Elk Foundation. An Easement Documentation Report (EDR) is a document which records the baseline condition of the ecological, physical, and cultural features of a property and its uses at the time the field assessment is completed. The field assessment for the Upper Birch Creek Ranch was completed in July 2009 under the direction of Clearwater Wildland Services, Seeley Lake, Montana. Information and methods used to complete this document include a field reconnaissance of the property, vegetation surveys including a preliminary timber cruise, applicable public GIS data, and existing documents and information developed by the Montana Heritage Program.

B. Property Description

Upper Birch Creek Ranch is located in Meagher County, Montana, 15 miles west of White Sulphur Springs. The property shares its west and south boundaries with the Helena National Forest (Figure1). This property is adjacent to the proposed Mount Baldy Wilderness Area in the Helena National Forest. The larger parcel shares part of its east boundary with Montana Department of Natural Resources and Conservation land. The two parcels also share boundaries with private landowners including the very large, historic Galt Ranch, a well known ranching family in Montana.

The property is accessed from County Roads and legal easements across neighboring properties. Upper Birch Creek Ranch consists of 7 parcels, a primary area of 6 parcels comprising approximately 1160 acres located in Sections 35 Township 09N, Range 04E and 2 Township 08N, Range 04E, and a second parcel of 160 acres located east of the primary parcel and separated by ¼ mile (Figure 2). Access to Parcel 1 is across a 60 foot wide easement across the southern section line of Section 2 that connects Parcel 1 with the primary piece of property.

The 7 parcels of Upper Birch Creek Ranch (Figure 3) are:

Parcel 1
Parcel Identification number: 47169401301010000
Section 01, T08 N, R04 E, S2S2, Township 09N, Range 04E, S01, T08 N, R04
160 Acres

Parcel 2
Parcel Identification number: 47169402201010000
Section 2, Township 08N, Range 04E, SW4, W2SE4, GOV LTS 2,3,4,5,6,7,10,11&12
654 Acres

Parcel 3
Parcel identification number: 47179635203020000
S35, T09 N, R04 E, S2SWNW
20 acres

Parcel 4
Parcel identification number: 47179635301010000
S35, T09 N, R04 E, S2NE, NWSE,NESENW, S2SENW, NESW, N2SESW

210 acres

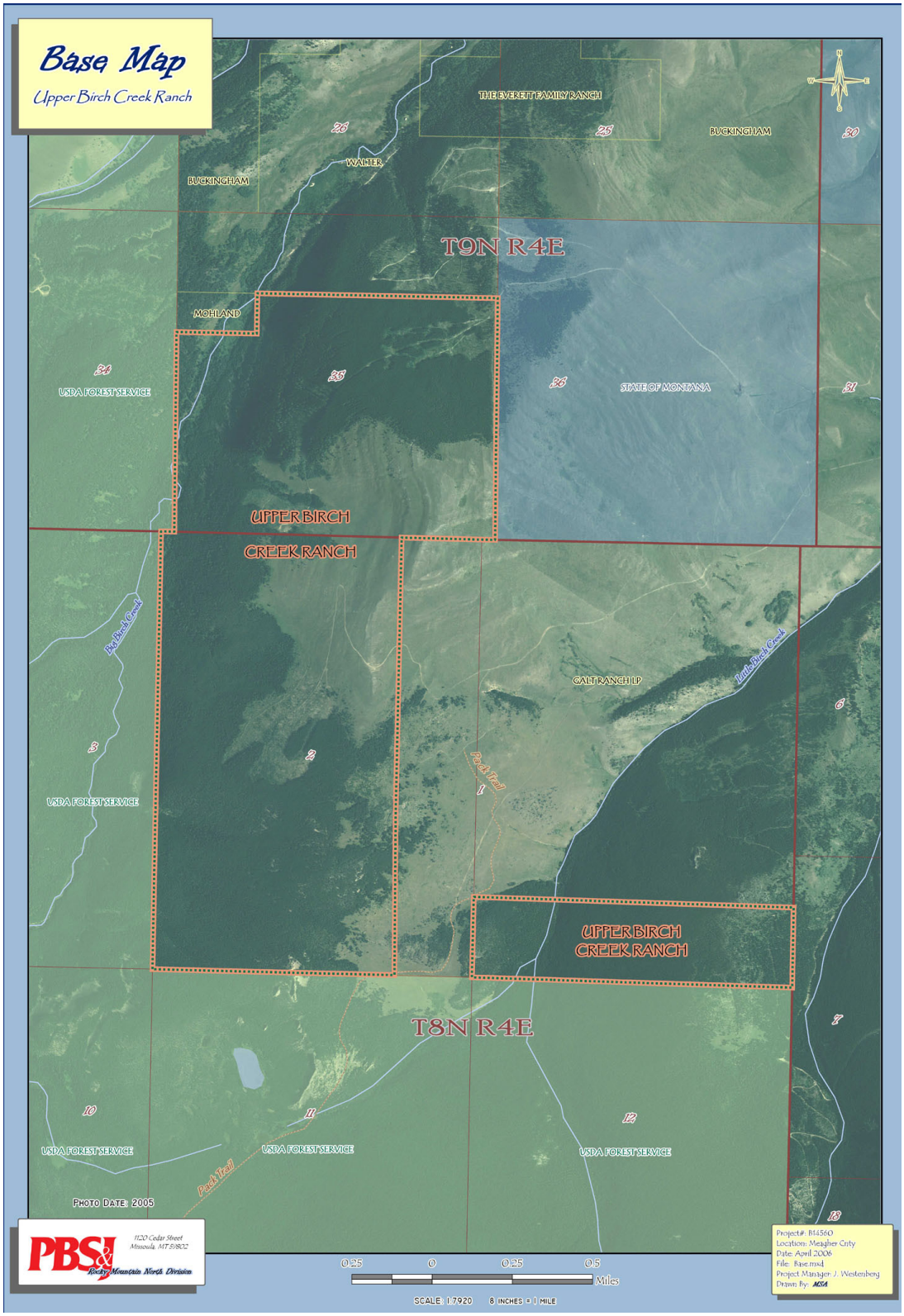


Figure 1. Upper Birch Creek Ranch property relative to adjacent landowners.

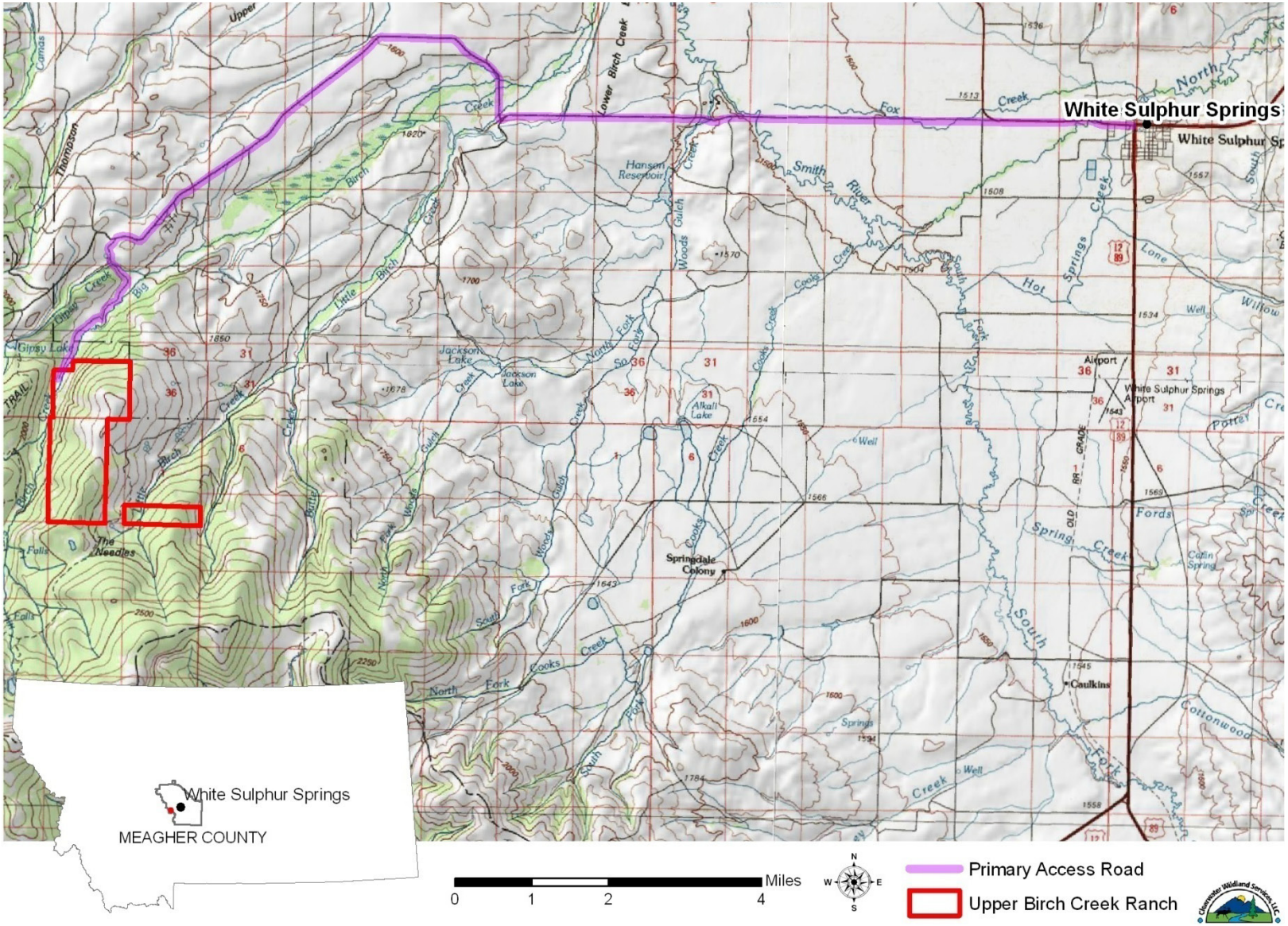


Figure 2. Location and access to Upper Birch Creek Ranch, Meagher County, Montana.

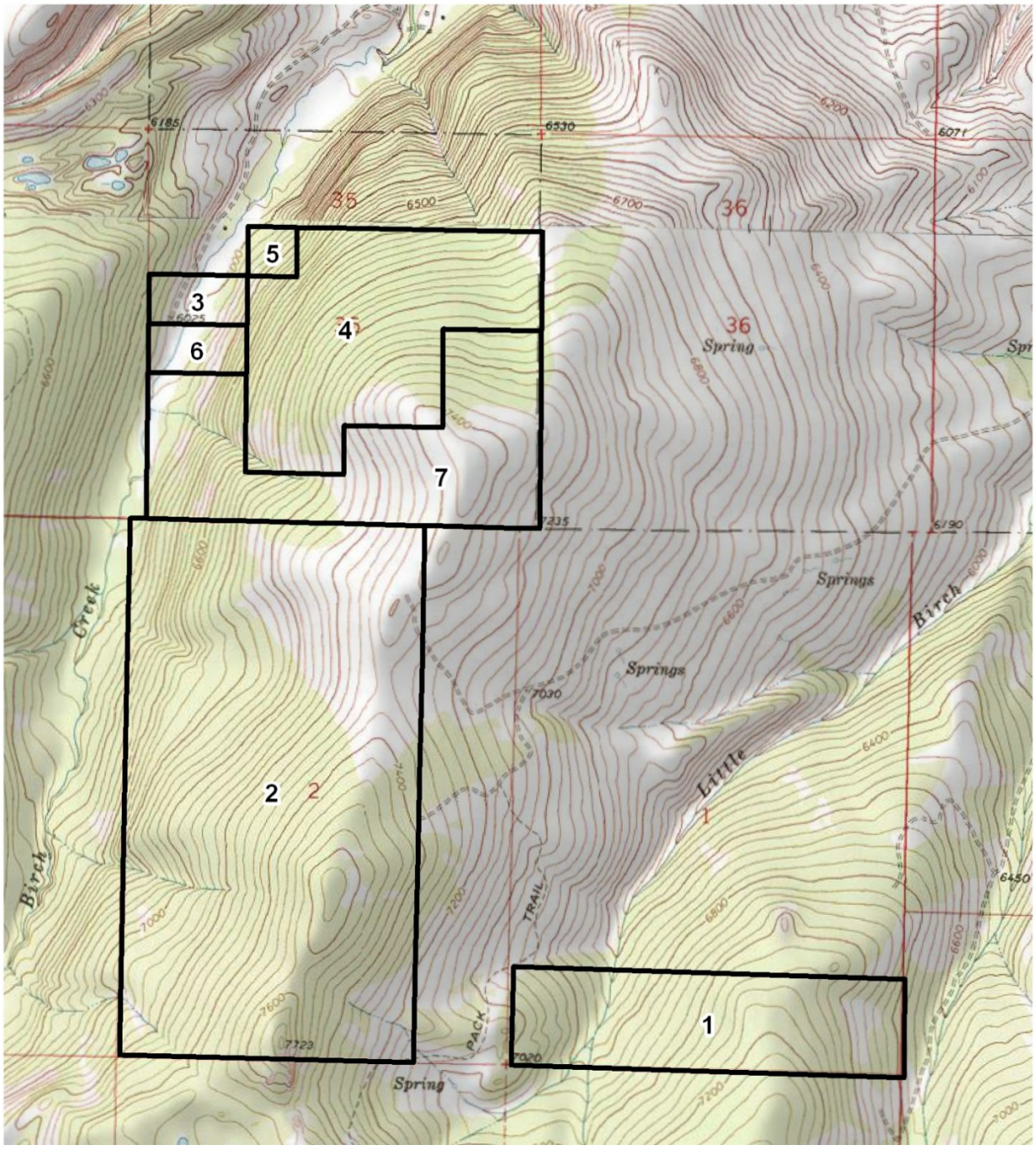


Figure 3. Topographic map of Upper Birch Creek Ranch showing individual parcels included in the property.

Parcel 5
Parcel identification number: 47179635302010000
S35, T09 N, R04 E, NWSENW
10 acres

Parcel 6
Parcel identification number: 47179635302020000
S35, T09 N, R04 E, N2NWSW
20 acres

Parcel 7
Parcel identification code: 47179635404010000
S35, T09 N, R04 E, E2SE4, SW4SE4, S2SE4SW4, SW4SW4,S2NW4SW4
200 acres

Total number of acres represented by all parcels included in the conservation easement approximately 1320 acres.

C. Property History

All lands in Sections 35, 1 and 2 are located within the Helena National Forest Boundary and were acquired by Catherine E. O'Connor from the USFS on June 21, 1944 in a trade for other lands held by O'Connor. This land trade was under a provision from the United States encouraging the USFS to consolidate their land holdings. All 3 Sections border the proposed Mount Baldy Wilderness Area. The lands were held as ranch land with livestock grazing by O'Connor until January 29, 1946 when she sold Section 35 to an adjoining neighbor, Roy Walter who homesteaded and ranched in neighboring Section 26. Roy Walter sold parcels 3,6, and 7 to Laurence Walter October 27, 1958. Laurence raised cattle and sheep and did some logging on the property and lived on Parcel 6 in a log cabin that he had hauled over from Thompson Gulch. The cabin burned in 1959, and the land in parcels 4 and 7 were lost to the bank about that time. Parcels 3,5 and 6 were saved from foreclosure by Roy Walter's daughter Fay Walter, who eventually owned lands in Section 26 and parcels 3,5, and 6 as well as the northern 160 acres in Section 35. Fay Walter has since transferred her ownership to her daughter, Virginia Walter. There was a log cabin in Parcel 5 that was owned by Norman Walter. Parcel 4 was purchased from the bank by Donald Bentzen Jr. and Ernie Friesz and they held it as an investment, and did have some logging done by Louisiana Pacific in the early 1990's. Parcel 7 was purchased from the bank by Dean Conklin who later sold it to Garrett and Margaret (Johnson) Van Ommen . "Van" owned a gas station in White Sulphur Springs and used the land for hunting. O'Connor sold Parcels 1 and 2 along with adjoining lands to Wellington D. Rankin. Following Wellington's death, these parcels eventually became part of the Galt's Birch Creek Ranch controlled by Louise Rankin Galt. These lands have always been used for cattle ranching, guided hunting and some timber management. The Galt Ranch is now operated by her son, Bill Galt.

The Upper Birch Creek Ranch was assembled in parts by Kevin Wetherell :

- Parcel 7 was acquired August 8, 2000 from Margaret Johnson (Van Ommen)
- Parcels 3,5, and 6 were acquired July 25, 2001 from Fay E. Walter
- Parcel 4 was acquired August 23, 2004 from Donald Bentzen Jr.
- Parcels 1 and 2 were acquired July 20, 2005 from the Galt Ranch Limited Partnership.

D. Cultural Features

Cultural features of the Upper Birch Creek Ranch are described in Table 1 and their locations illustrated in Figure 4 (corresponding photograph number(s), for example P1, are provided where applicable).

Table 1- Cultural Features on the Upper Birch Creek Ranch

Feature	Approximate Dimensions
Access Road along Birch Creek	3,546 ft
Bridge over Birch Creek (P 1 and 2)	40 ft X 10 ft
Mountain roads (P 3)	14,105 ft
Fences- see map	15,317 ft
ATV trail- see map	7,192 ft
Old logging roads- see map	25,910 ft

Current structures: None on the property.

Access Roads: The primary roads on the property consist of the access roads from Birch Creek Road to the property (Figure 2 and Figure 4), and a series of 2-track roads on the property (Figure 4). The access road has received some improvements, while the rest of the roads are generally rough 2-track roads that allow access to the upper parts of the property. An ATV trail has been cleared along the east site of the large parcel, as shown in Figure 4. Various old logging roads also occur on the property (Figure 4).

Fences: Fences occur along some stretches of the boundaries of the property, and a few stretches of interior fence are present. The locations of fences are shown in Figure 4. In general, the property is currently not fenced for livestock inclusion or exclusion.

Utilities: None on the property

Miscellaneous: An old 1940's Buick (Photograph 4) is located on the property. The old Buick had the engine removed and was taken to its location in Section 2 in the 1950's. It was used as a camp by White Sulphur Springs' local, Bill Fuller who worked logging in Section 2. He later used the old Buick successfully as a hunting blind. Some old pipe, planks, and barbwire (Photograph 5) are also present on the property.

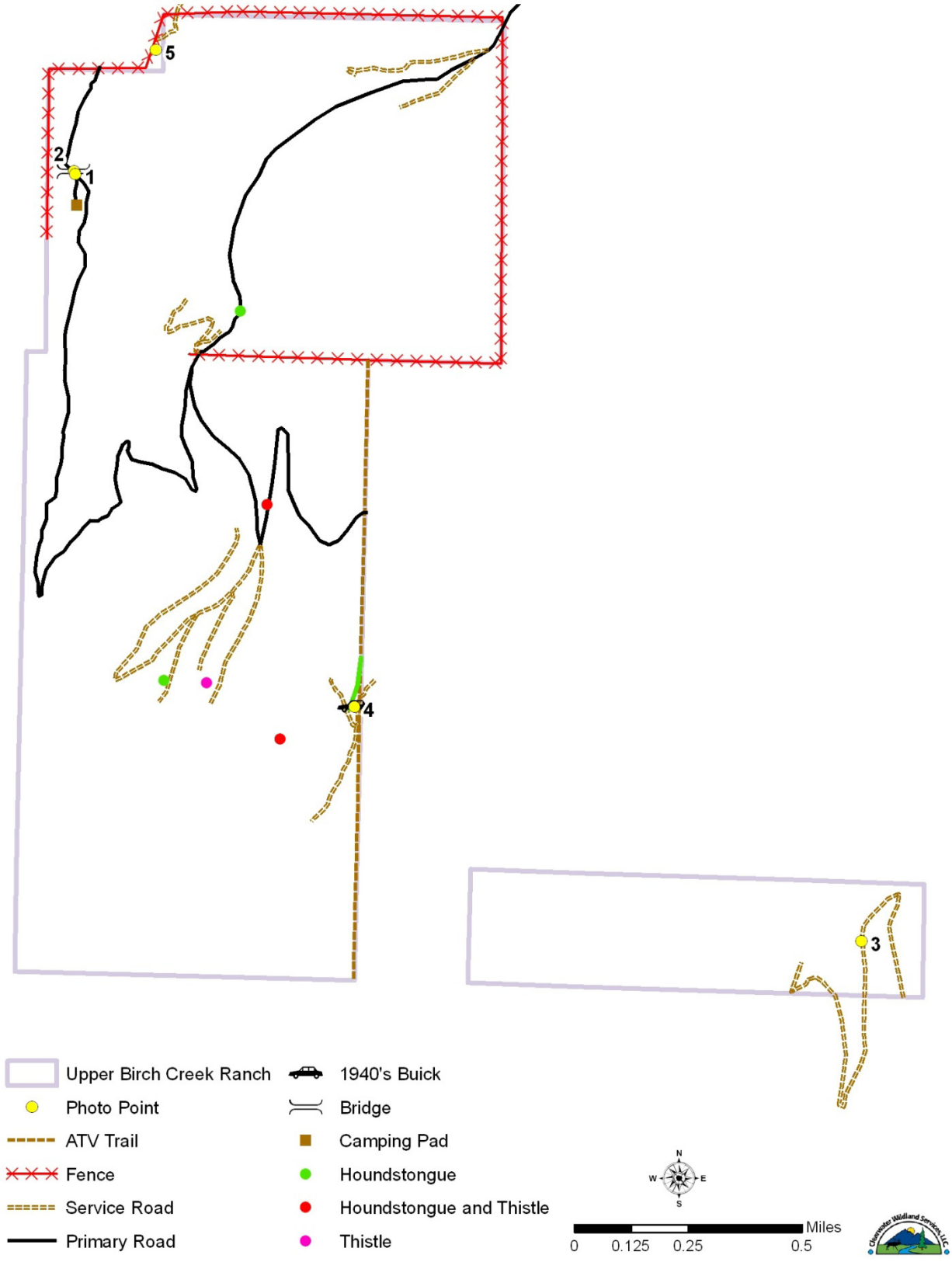


Figure 4. Cultural features, weeds, and photo points on the Upper Birch Creek Ranch.

ECOLOGICAL INFORMATION

The Upper Birch Creek Ranch is annual elk range and provides excellent elk, deer and moose habitat, along with habitat for other numerous plants and animals. The property is a mix of open grassland communities and heavily forested subalpine fir (*Abies lasiocarpa*), whitebark pine (*Pinus albicaulis*), lodgepole pine (*Pinus contorta*), Douglas fir (*Pseudotsuga menziesii*) and Engelmann spruce (*PIcea engelmannii*) forest. Big Birch Creek runs through the larger parcel (Photograph 2) and Little Birch Creek goes through the smaller parcel. The Upper Birch Creek Ranch ranges in elevation from approximately 5976 to 7732 feet. A general map of habitat types, other ecological features, and related photograph points is provided in Figure 5. No confirmed rare or endangered plant species were observed on this property.

A. Vegetation

Idaho Fescue habitat type

The Idaho Fescue habitat type occupies approximately 19.3% (245.5 acres) of the Upper Birch Creek Ranch (Photograph 6 and 7). This habitat type is often characterized by a diversity of grass and forb species, and can support various species of low shrubs, but is primarily dominated by Idaho fescue (*Festuca idahoensis*). Other significant grass species (Mueggler and Stewart 1980) can include Columbia needlegrass (*Achnatherum nelsonii*), timber oatgrass (Danthonia intermedia), mountain brome (*Bromus marginatus*), and various sedges (*Carex* spp.) Other associated species include sticky geranium (*Geranium viscosissimum),* mountain big sagebrush (*Artemisia tridentata*), and shrubby cinquefoil (*Dasiflora fruticosa*).

Current Conditions: These high elevation meadows are dominated by Idaho fescue and other forbs and low woody vegetation. Some areas support sizable patches of grouse whortleberry (*Vaccinium scoparium*) (Photograph 8) where this habitat type transitions into the forested habitat types.

Subalpine fir/whitebark pine/grouse whortleberry habitat type (ABLA-PIAL/VASC)

This subalpine fir/whitebark pine/grouse whortleberry habitat type covers approximately 49.4**%** of the Upper Birch Creek Ranch (Figure 4), or approximately 630 acres (Photographs 9-11). This habitat type is one of the dominant high elevation habitat types east of the Continental Divide in Montana, typically occurring just below the whitebark pine habitat series that occupies even higher elevation sites (Pfister et al. 1977). Subalpine fir is the dominant late successional species in this habitat type, but may be intermixed with whitebark pine and sometimes Engelmann spruce on moister locations. Lodgepole pine occurs as an early successional species that can persist for substantial durations mixed with the later successional subalpine fir and whitebark pine. The understory is typically dominated by grouse whortleberry, although elk sedge (*Carex geyeri*) may occur on dryer sites. Other species typically associated with the understory of this habitat type include slender hawkweed (*Hieracium gracile*) and broadleaf arnica (*Arnica latifolia*). This site has a much more restrictive plant list than other lower elevation sites in the area.

This habitat type was historically influenced by infrequent but stand-replacing fire events. Following fire, whitebark pine and lodgepole pine would reestablish, and with time, subalpine fir would reestablish in the understory. Eventually, the subalpine fir would replace most of the lodgepole pine unless another burn occurred, with whitebark pine remaining as an additional overstory component.

Current conditions: Subalpine fir is the dominant species occurring on this habitat type at the present. Intermixed with the fir are whitebark pine at the higher elevations, lodgepole pine at the lower elevations, and Engelmann spruce in moister locations. Understory is primarily grouse whortleberry with other grasses and forbs. Substantial beetle kill is occurring in the lodgepole pine, and many of the whitebark pines are already dead, probably from white pine blister rust. Specific tree information is provided in the timber management section.

Whitebark pine habitat type (PIAL series)

This habitat type occurs on top of the drier mountain ranges east of the Continental Divide on sites that are too dry for subalpine fir habitat types and at elevations (cold) greater than tolerated by Douglas fir and limber pine (Pinus *flexilis*) (Pfister et al. 1977). Thus it is the combined effects of cold and dry conditions that determine the location of this habitat type. Whitebark pine is the dominant tree in this habitat type, as conditions are too harsh for other tree species to occur in substantial numbers. Under growth is variable, with grouse whortleberry common on the highest and least droughty sites, elk sedge and Parry's rush (*Juncus parryi*) occurring on sites of intermediate moisture, and Idaho fescue and various forbs occurring on the driest sites still capable of supporting trees (Pfister et al. 1977). This habitat type is bounded on drier areas supporting Idaho fescue habitat types, and on moister sites by subalpine fir habitat types.

This habitat type was historically influenced by an understory or a low-mixed severity fire regime. Fires would occasionally occur but would primarily occur as understory burns because of the lower density of whitebark pines, although a percentage of the whitebark pine would be killed by these fires. With fire exclusion and with the introduction of white pine blister rust, whitebark pines have been dying in many locations and have little regeneration.

The PIAL habitat type covers approximately 2.3% of the Upper Birch Creek Ranch, or approximately 30 acres. It occurs primarily at the higher elevation and more southerly exposures.

Current Conditions: The areas of whitebark pine habitat type on the Upper Birch Creek Ranch support whitebark pine with a mixed understory of grouse whortleberry, Idaho fescue, and other forbs. Many of the whitebark pines are dead or dying, possibly due to white pine blister rust. More complete information on the tree component is provided in the Timber Management section.

Subalpine fir/grouse whortleberry habitat type (ABLA/VASC)

The subalpine fir/grouse whortleberry habitat type occurs at a slightly lower elevation that the ABLA-PIAL/VASC habitat type on the Upper Birch Creek Ranch. It covers approximately 14.9% of the property, or approximately 190 acres. ABLA/VASC is one of the most abundant habitat types at higher elevations east of the continental divide in Montana. It is dominated by subalpine fir in late successional conditions, with lodgepole pine as a seral species that can persist with subalpine fir for considerable lengths of time. Understory species consist of grouse whortleberry along with broadleaf arnica, elk sedge, heartleaf arnica (*Arnica cordifolia*), and pinegrass (*Calamagrostis rubescens*) (Pfister et al. 1977).

This habitat type historically was influenced by catastrophic wildfire on an average fire return interval of 150-250 years or longer, depending on the site (Pfister et al. 1977). Lodgepole pines occurring in this habitat type were occasionally killed by severe outbreaks of mountain pine beetle, which may have also contributed to the occurrence of wildfires. The site has low to moderate productivity for timber, as it occurs on fairly cold and dry

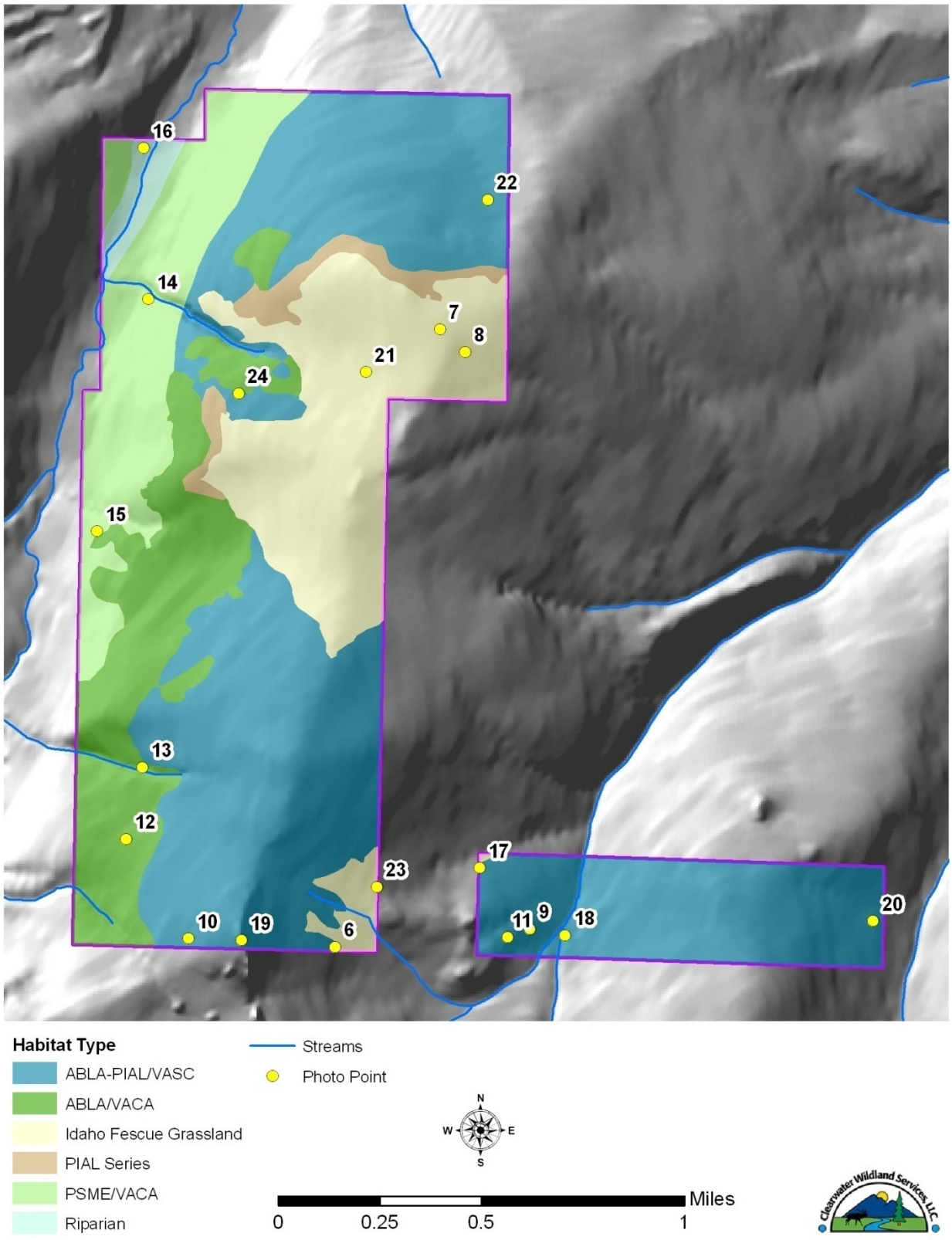


Figure 5. Habitat types and associated photo points on the Upper Birch Creek Ranch.

sites. Forage for big game is sparse in mature stands, but may be 800-1000 lbs/acre in clearcuts or burns (Pfister et al. 1977). Palatability of plants for cattle is generally low, but this could be different in recent burns.

Current conditions: The stands in the ABLA/VASC habitat type on the Upper Birch Creek Ranch are heavily timbered, as described further in the Timber Management section (Photographs 12 and 13). Lodgepole pines are experiencing a severe mountain pine beetle outbreak, with considerable mortality of this species. This will increase the fire risk of these stands for several years, and then open up the canopy if fire does not occur. Without fire, the dead lodgepole will eventually topple creating many areas with a thick tangle of downed wood.

Douglas fir/dwarf huckleberry habitat type (PSME/VACA)

This habitat type occurs at the lower elevations on the Upper Birch Creek Ranch. It covers approximately 12.7% of the Property, or 162 acres. Douglas fir/dwarf huckleberry is found on relatively warm and moist but well-drained sites in west-central and central Montana (Pfister et al. 1977), occurring at higher elevations east of the Continental Divide. Late successional stands are dominated by Douglas fir, with lodgepole pine as a successional species. Understory species consist of dwarf huckleberry (*Vaccinium cespitosum*), elk sedge, pinegrass, and kinnikinnick (*Arctostaphlyos uva-ursi*).

Historically this habitat type was in a mixed fire severity regime, with moderately frequent understory burns that would become stand replacing in pockets or during extreme fire events. Given the surrounding habitat types on the Upper Birch Creek Ranch, this habitat type was probably more influenced by more severe fire events than this habitat type in other areas where it may be mixed with drier, lower elevation habitat types.

Current conditions: The stands in this habitat type are currently dominated by Douglas fir intermixed with high numbers of lodgepole pine and smaller amounts of subalpine fir (Photographs 14 and 15). At the lower levels near the Riparian area, some Engelmann spruce are present in small numbers. Some mortality of the lodgepole pine is occurring, and more will likely occur with the current outbreak of mountain pine beetle. More information on these stands is provided in the Timber Management section.

Riparian habitat type

This generalized habitat type occurs along Big Birch Creek, covering 1.4% of the Property, or some 18 acres. This type supports Douglas fir, subalpine fir, Engelmann spruce, alders (*Alnus* spp.), willows (*Salix* spp.), and other species. It is a productive area, but was not inventoried for timber due its status as a riparian area along the stream (Photograph 16). In addition to Big and Little Birch Creeks, the property also has at least one seep (Photograph 17), and several smaller streams occurring on it (Photograph 18)

Current Conditions: The riparian area generally supports thick forest cover predominated by Douglas fir, subalpine fir, and some lodgepole pine.

Rocky Outcrops/Cliffs

A rocky outcrop occurs on the northeastern edge of Parcel 1 (Photograph 19). The Needles, a significant rocky outcrop, occurs just south of the Property.

B. Wildlife

As indicated in the introduction to the Ecological section, Upper Birch Creek Ranch is year-round elk range and provides excellent elk, deer, and moose habitat, along with habitat for other numerous plants and animals. A map of elk habitat designations is included as Figure 6. Numerous signs of the heavy use of the property by elk are easily observed (Photographs 20, 21, 22) and several bull, cow, and calf elk were observed during the field survey. In addition to elk, mule deer, whitetail deer, blue grouse, and snowshoe hare were observed using the property during the field survey. All of these species have tremendous local value for hunting, wildlife viewing, or aesthetic reasons.

Upper Birch Creek Ranch has high wildlife habitat value and contributes to the important regional habitat for several species of concern including wolverine, gray wolf, northern goshawk, and black rosy finch (Natural Heritage Tracker 2009, mtnhp.org). The riparian and wetland areas occurring on the property should also support many species of fish, amphibian, and reptile species. Another species of concern, Westslope cutthroat trout have historically occurred in both Big and Little Birch Creeks. Rocky outcrops are also noteworthy as cliff habitat that can provide for the rare Peregrine Falcon, as well as other raptor species such as Bald or Golden Eagles.

From a regional perspective, Upper Birch Creek Ranch is adjacent to Helena National Forest lands and Montana Department of Natural Resources and Conservation lands, contributing to the continuity of linkage zones and ecological viability for many migratory or far-ranging wildlife species. The proposed Mount Baldy Wilderness Area surrounding the property on the Helena National Forest make maintaining the Upper Birch Creek Ranch in a relatively undeveloped status very desirable. The Little and Big Birch Creek watersheds remain relatively natural, diverse ecosystems that contribute significantly to wildlife and fish habitat, and water quality values that flow downstream to the Smith River, an important fisheries, recreational, and irrigation resource to the region.

SPECIAL MANAGEMENT CONSIDERATIONS

A. Timber Management

A timber management plan would be good for the Upper Birch Creek Ranch to identify what might be done to maintain the quality of big game habitat as the composition of the forest shifts due to effects of mountain pine beetle and possibly white pine blister rust. As part of the ecological assessment, 45 variable radius plots were distributed across the various delineated stands of timber (Figure 6) to provide an initial estimate of the types of timber present. The acreage and dominant habitat type of each stand is presented in Table 2. Results of the timber sampling are presented in Table 3. This information demonstrates the very high amounts of timber present on many areas of the Property. Of particular concern is the large amounts of lodgepole pine, and what will happen with the current mountain pine beetle outbreak. Considerable mortality has already occurred (Photograph 23 and 24), and more is likely to occur in the next year or two. The thickly timbered areas provide good security habitat for elk and other big game, but provide poor foraging areas. As the lodgepole pine canopy dies, this will open up the understory for more vegetation. However, the tangle of downed timber that may occur if the lodgepole pine is left to fall may keep elk out of substantial areas for a number of years. Judicious harvesting of the dead and dying lodgepole pine could improve the habitat quality of the property.

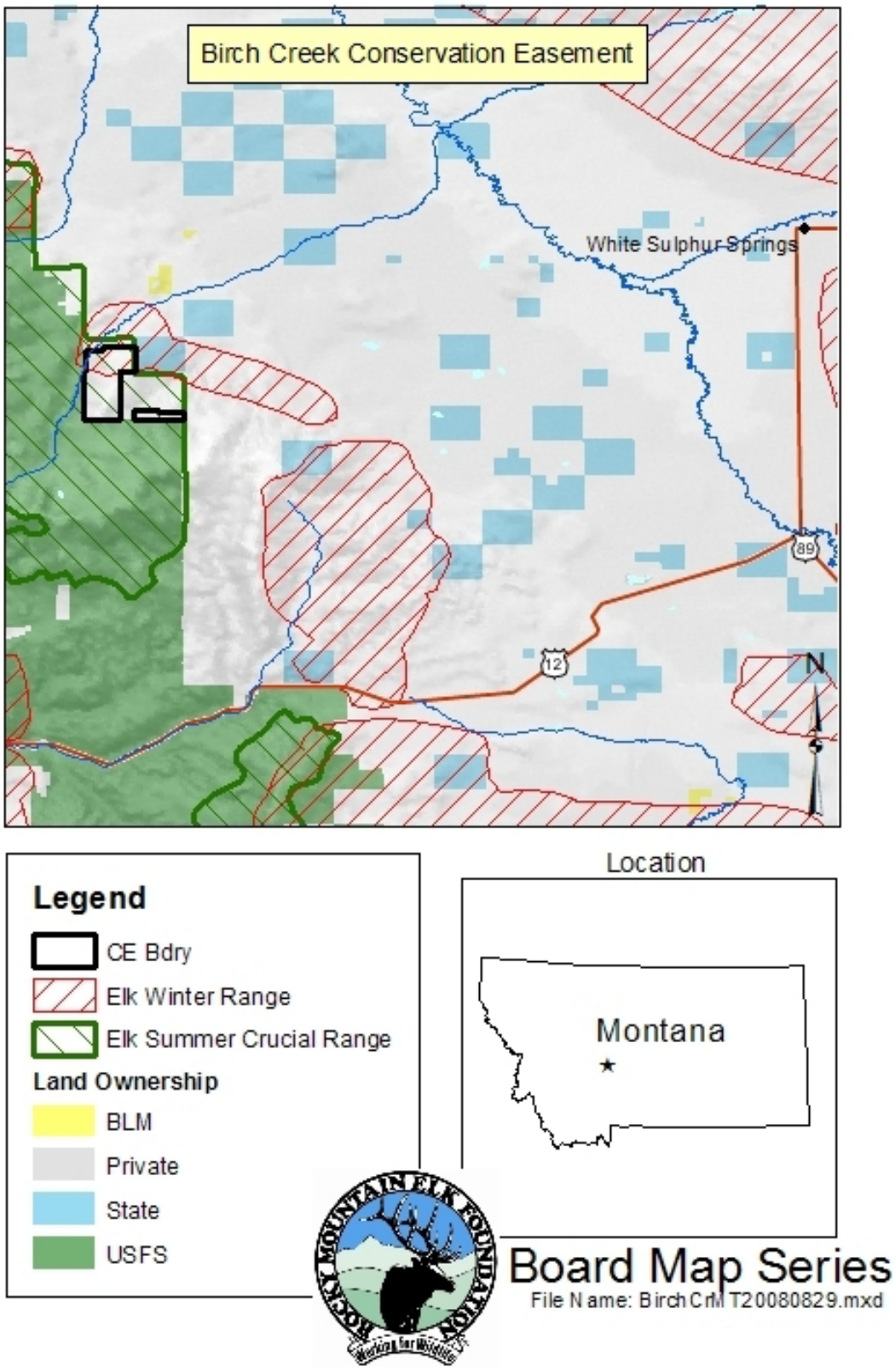


Figure 6. Elk habitat designations for the Upper Birch Creek Ranch.

Table 2. Acreage and dominant habitat type of delineated timber management stands on the Upper Birch Creek Ranch.

Stand	Habitat type	Acres
1	Idaho Fescue Grassland	17.4
2	ABLA-PIAL/VASC	83.3
3	ABLA-PIAL/VASC	138.6
4	ABLA-PIAL/VASC	20.1
5	ABLA-PIAL/VASC	16.2
6	ABLA-PIAL/VASC	58.6
7	ABLA-PIAL/VASC	37.3
8	ABLA-PIAL/VASC	27.1
9	ABLA-PIAL/VASC	14.8
10	ABLA-PIAL/VASC	41.7
11	Idaho Fescue Grassland	228.1
12	ABLA-PIAL/VASC	161.8
13	ABLA-PIAL/VASC	1.0
14	PIAL Series	29.6
15	ABLA/VACA	100.5
16	ABLA/VACA	66.6
17	ABLA-PIAL/VASC	29.2
18	ABLA/VACA	22.5
19	PSME/VACA	161.9
	Riparian	18.4

B. Noxious/Invasive Weeds

Two invasive weed species were noted on Upper Birch Creek Ranch (Figure 4). Houndstongue (*Cynoglossum officinale*) and Canada thistle (*Cirsium arvense*) were recorded, and mapped where seen, although additional locations of these species on the Property are likely present but were missed in this field survey. In addition, cheatgrass was observed on neighboring properties along the access road to the Upper Birch Creek Ranch, so the spread of this species onto the Property may occur without prevention measures.

Table 3. Results of variable plot timber cruising on Upper Birch Creek Ranch, July 2009. Stand locations are shown in Figure 6. Habitat types are:

ABLA-PIAL/VASC= subalpine fir-whitebark pine/ grouse whortleberry, PIAL series= whitebark pine, ABLA/VACA= subalpine fir/dwarf huckleberry, and PSME/VACA= Douglas fire/dwarf huckleberry. AF=subalpine fir, DF= Douglas fir, ES= Engleman spruce, LP= lodgepole pine, and WBP= whitebark pine. TPA= trees/acre, DBH=diameter at breast height, BA/AC=basal area per acres.

Stand ID	# of Plots	Habitat Type	*TPA 1" to 4.99" DBH*					*TPA >=5" DBH*					*BA/AC*					TPA Average	BA/ac Average
			AF	DF	ES	LP	WBP	AF	DF	ES	LP	WBP	AF	DF	ES	LP	WBP		
2	4	ABLA-PIAL/VASC	475	-	-	25	75	25	-	-	275	-	20	-	-	155	10	1225	245
3	3	ABLA-PIAL/VASC	733.3	-	-	200	-	-	-	-	833.3	-	-	-	-	200	-	1767	200
4	1	ABLA-PIAL/VASC	800			100	200				100		40			40		1300	80
5	2	ABLA-PIAL/VASC	400	-	-	-	-	100 150	-	-	100	-	60	20	-	20	-	650	100
6	3	ABLA-PIAL/VASC	266.7	-	-	300	233.3	-	-	-	400	-	-	-	-	146.7	-	1200	147
7	2	ABLA-PIAL/VASC	650	-	-	250	100	50	-	-	100	-	25	-	-	15	-	1150	40
8	2	ABLA-PIAL/VASC	750	-	-	250	250	50	-	-	300	-	-	-	-	100	-	1600	100
9	2	ABLA-PIAL/VASC	50	-	-	450	-	-	-	-	200	-	-	-	-	10	-	700	10
10	4	ABLA-PIAL/VASC	-	-	-	1125	-	-	-	-	-	-	-	-	-	24.5	-	1125	25
12	3	ABLA-PIAL/VASC	266.7	-	-	500	-	-	-	-	766.7	-	-	-	-	133.3	-	1533	133
13	2	ABLA-PIAL/VASC	50	50	50	100	-	-	-	-	150	-	-	-	-	20	-	400	20
14	3	PIAL Series	-	-	-	-	33.3	-	-	-	-	33.3	-	-	-	-	13.3	67	13
15	3	ABLA/VACA	933.3	-	-	-	-	300	33.3	33.3	133.3	-	120	13.3	26.7	40	-	1433	200
16	3	ABLA/VACA	266.7	-	-	100	-	-	-	-	600	-	-	-	-	213.3	-	967	213
17	2	ABLA-PIAL/VASC	-	-	-	3000	-	-	-	-	-	-	-	-	-	16.4	-	3000	16
18	1	ABLA/VACA	500	500		600							10.9	10.9		13.1		1600	35
19	5	PSME/VACA	60	-	20	20	-	60	200	60	140	-	24	152	48	56	-	560	280

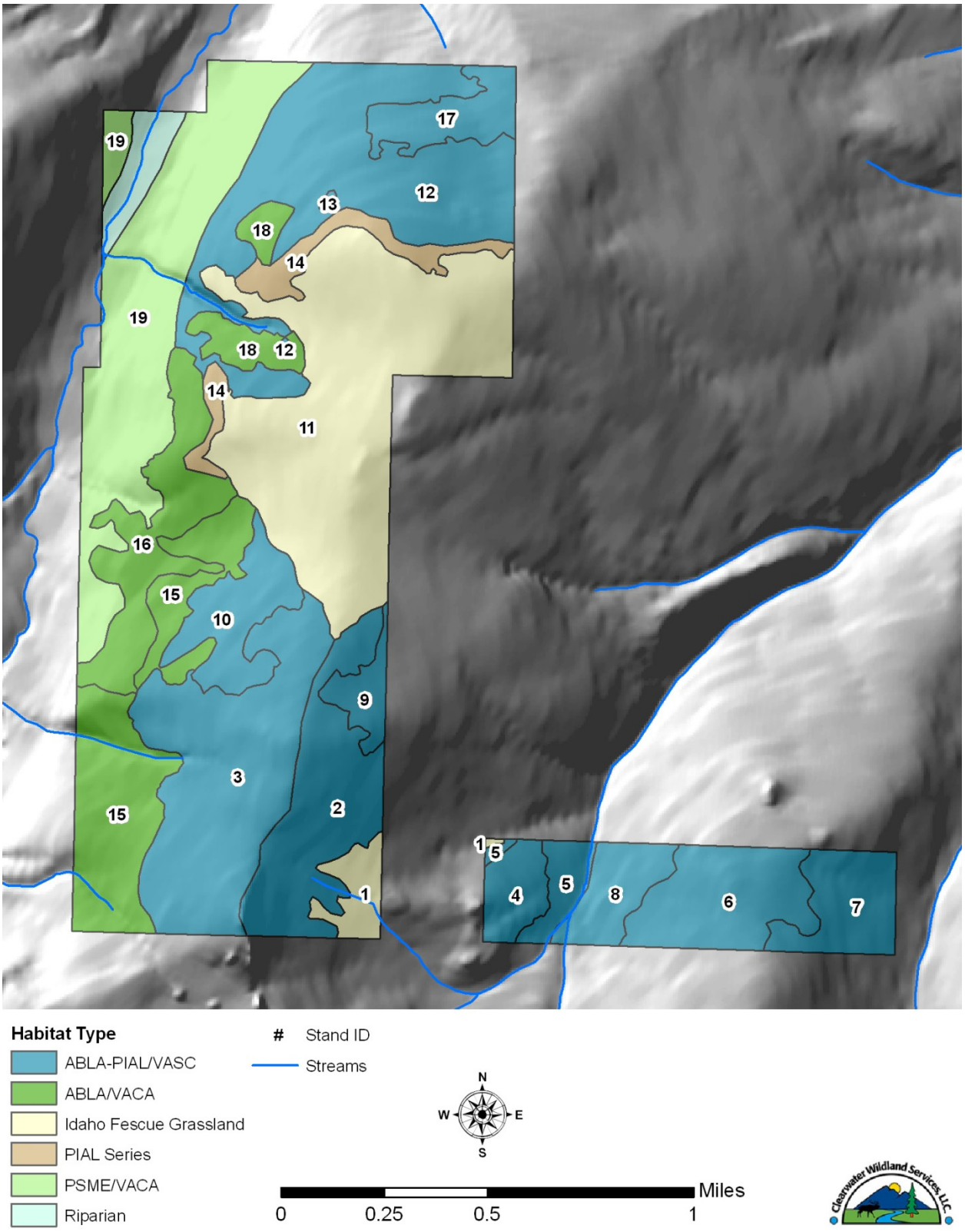


Figure 6. Timber management stands and habitat types on the Upper Birch Creek Ranch.

PHOTOGRAPH POINTS

2009 Photographs of cultural features and plant communities on the Upper Birch Creek Ranch.

Photograph 1- Access drive approaching bridge over Big Birch Creek

Photograph 2- Bridge over Big Birch Creek

Photograph 3- Two track road on east portion of the property

Photograph 4- Old Buick abandoned on property

Photograph 5- Old pipe, planks, and barbwire on property

Photograph 6- Idaho fescue habitat type showing existing grass and shrub vegetation

Photograph 7- Idaho fescue habitat type

Photograph 8- Grouse whortleberry patch in Idaho fescue habitat type

Photograph 9- Subalpine fir-whitebark pine/grouse whortleberry habitat type

Photograph 10- Subalpine fir-whitebark pine/grouse whortleberry habitat type

Photograph 11- Subalpine fir-whitebark pine/grouse whortleberry habitat type

Photograph 12- Subalpine fir/dwarf huckleberry habitat type

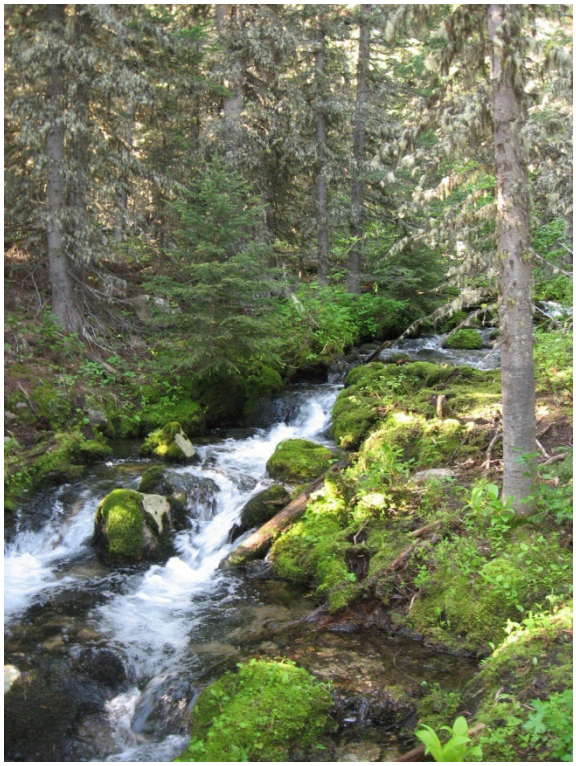
Photograph 13- Subalpine fir/dwarf huckleberry habitat type with small stream

Photograph 14- Douglas fir/dwarf huckleberry habitat type

Photograph 15- Douglas fir/dwarf huckleberry habitat type

Photograph 16- Riparian habitat type along Big Birch Creek

Photograph 17- Seep area, heavily used by wildlife on the Property



Photograph 18- Head-water stream originating on the Property

Photograph 19- Rocky outcrop on Property

Photograph 20- One of numerous game trails on the Property

Photograph 21- Elk using Idaho fescue meadows on the Property

Photograph 22- Extensive elk rubs in various forested areas on the Property

Photograph 23. Beetle killed lodgepole pine on the Property

Photograph 24. Mortality of both whitebark pine and lodgepole pine on the Property

LITERATURE CITED

Pfister, R. D., B. l. Kovalshik, and S. F. Arnold. 1977. Forest habitat types of Montana. USDA Forest Service General Technical Report INT-34.

Montana Natural Heritage Program. 2004. Montana animal species of concern. Montana Natural Heritage Program and Montana Fish, Wildlife, and Parks. Helena, Montana 11pages.

Mueggler, W. F. and W.L. Stewart. 1980. Grassland and shrubland habitat types of Western Montana. USDA GTR INT-66

Table 1. Upper Birch Creek Ranch - Photograph points geospatial information.

Number	Comments	Azimuth[a]	Latitude[b]	Longitude
Photograph 1	New Bridge	315	46.49457157	-111.1992461
Photograph 2	New Bridge	355	46.49465385	-111.1993114
Photograph 3	New Road	185	46.47066643	-111.1622921
Photograph 4	1940's Buick	290	46.47779617	-111.1858576
Photograph 5	Pipe, Old Planks, Barbwire Corral	65	46.49858915	-111.1956454
Photograph 6	Idaho Fescue Grassland	5	46.4692312	-111.1877007
Photograph 7	Idaho Fescue Grassland	240	46.49134191	-111.1829481
Photograph 8	Grouse whortleberry patch	170	46.49054915	-111.1816447
Photograph 9	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	190	46.47002514	-111.1776546
Photograph 10	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	30	46.469427	-111.195258
Photograph 11	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	295	46.46970947	-111.1788086
Photograph 12	Subalpine Fir/Dwarf Huckleberry habitat type	180	46.47292536	-111.19861
Photograph 13	Subalpine Fir/Dwarf Huckleberry habitat type	293	46.47549525	-111.1978217
Photograph 14	Douglas Fir/Dwarf Huckleberry habitat type	65	46.49219401	-111.1980609
Photograph 15	Douglas Fir/Dwarf Huckleberry habitat type	230	46.48386969	-111.2004602
Photograph 16	Riparian	110	46.49757762	-111.1984619
Photograph 17	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	80	46.47215917	-111.1803099
Photograph 18	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	200	46.4698233	-111.1758335
Photograph 19	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	20	46.46939842	-111.1925095
Photograph 20	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	160	46.47057046	-111.1599505
Photograph 21	Bachelor group of bull elk	320	46.48975773	-111.1867385
Photograph 22	Elk rubs in dense lodgepole pine	350	46.49599621	-111.1806365
Photograph 23	Beetle killed Lodgepole Pine	310	46.47140874	-111.1855913
Photograph 24	Subalpine Fir-Whitebark Pine/Grouse Whortleberry habitat type	20	46.48890604	-111.1932768

[a] Azimuth taken as magnetic north (declination at this location is 13 degrees) [b] Projection = North American Datum 1983