Missouri-Sun-Smith Mitigation Bank

Prospectus

Prepared for

United States Army Corps of Engineers, et al

Prepared by

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November 2012

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Executive Summary

Project Name

Missouri-Sun-Smith Mitigation Bank (MSSMB)

Site Description

The proposed stream and wetland mitigation bank consists of several tracts on the 17,000-acre LF Ranch owned by the Pierce Family. The Bank contains over 1,923 acres of mid-elevation prairie, scrub-shrub, montane, riparian, stream and wetland resources on the Rocky Mountain Front west of Augusta, Montana. The Bank occurs on Smith Creek, Duvall Creek and Elk Creek, tributaries to the Sun River.

Cottonwood bottoms, scrub-shrub and herbaceous wetlands dominate the Bank areas and are classified based on their vegetation cover and associated environmental characteristics. Upland areas include fescue grasslands occurring in the ecotone between prairie and montane environments; two prairie grassland types separated based on the dominant vegetation and associated soil texture; and an upland shrub type with some relatively unique shrubs and fescue as dominant grass.

The wetland and riparian types on the Ranch are especially diverse, widespread (due to considerable subsurface discharge), and important for habitat. The NWI types include PEM, PSS and PFO as well as riverine wetlands; there is also a non-wetland riparian type described as buffers/inclusions.

Bank Sponsor

East Front, LLC
21 N. Last Chance Gulch, Suite 202
Helena, MT 59601

Land Owners

LF Ranch, The Pierce Family (collectively)
1029 North Two Waters Way
Belgrade, MT 59714

Individual parcels of the LF Ranch are owned by various members of the Pierce family and held in different single purpose entities (LLCs) for business purposes. The Bank will be located on parcels owned by Haystack LLC, Skunk Creek Company LLC, and Ben and Penelope Pierce; all are owned by members of the Pierce Family.

Sponsor's Agent

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Project Description

East Front, LLC proposes development of the Missouri-Sun-Smith Mitigation Bank (MSSMB). The proposed Bank includes wetland (PEM, PSS and PFO), stream and riparian resources in Lewis and Clark County, Montana. The purpose of the MSSMB is to provide compensatory mitigation for unavoidable adverse impacts to wetlands and aquatic habitats that may occur in the Primary Geographic Service Area of the Missouri-Sun-Smith Major Basin (Montana Department of Transportation [MDT], District 7, including HUCs 10030101 through 10030105) as well as in a Secondary Service area of the Teton Watershed (HUC 10030205).

The overall objective of the Bank is to provide stream and wetland credits while providing for the restoration and protection of the existing approximately 93 acres of wetlands (12.2 acres on Duvall Creek and 80.8 acres on Elk Creek); and 27,337 linear feet of 1st through 3rd order perennial streams (Smith Creek, Duvall Creek and Elk Creek). Additionally, enhancement and protection of approximately 56 acres of surrounding and included uplands as foraging and breeding habitat is proposed. Wetland restoration will generate 35.6 credits, while upland enhancement and protection will generate an additional 11.2 credits (total 46.8 credits); restoration and enhancement of streams and riparian buffers will generate a total of 110,346 credits.

Mitigation bank lands will be protected via a special condition of the 404 permit authorization issued for the project. The bank lands will be managed by the landowner, Montana Land Reliance, or other third-party long-term manager acceptable to the Corps, in consultation with the IRT, thus ensuring appropriate management of the land in perpetuity.

Bank Location and Ownership

Project Description

East Front, LLC proposes development of a mitigation bank, to be known as the Missouri-Sun-Smith Mitigation Bank (MSSMB), on several tracts of the Pierce Family's "LF Ranch" in Lewis and Clark County, Montana. The purpose of the MSSMB is to provide compensatory mitigation for unavoidable adverse impacts to wetlands and aquatic habitats that may occur in the local major watershed basin (Missouri-Sun-Smith, MDT Watershed District 7), and secondarily in the adjacent Teton watershed. Compensation for impacts in this "secondary service area" is proposed due to the similarity of resource type along the Rocky Mountain Front.

The overall objective of the Bank is to restore and protect approximately 93 acres of herbaceous, scrub-shrub and forested wetlands; 56 acres of upland buffers and inclusions; and 5.2 miles of 1st – 3rd order perennial streams and riparian buffers. Restoration includes reconnection of streams and their respective floodplains, stream bank treatments to re-establish natural geomorphological processes, replanting of cropped areas, supplemental planting of impacted habitats, nuisance species control, and livestock exclusion and/or reduced grazing.

Bank areas will be monitored for a minimum of five years to gauge progress toward meeting various performance standards, and remedial and adaptive management actions will be taken to ensure the success of Bank areas. Bank areas will be protected in perpetuity by special conditions of the 404 permits issued for the restoration work, and will be managed long-term by an IRT-approved entity, thus ensuring the perpetuation of habitat values in perpetuity.

Location

The Bank is located in Lewis and Clark County in Township 19N, Range 7W, Sections 6, 10 & 11; Township 20N, Range 7W, Section 32; and Township 19N, Range 8W, Section 19 (Figure 1). The Bank is located along the Rocky Mountain Front, mostly in the Montana Valley and Foothill Prairies ecoregion. The Montana Valley and Foothill Prairies is a region characterized by short-grass prairie but is unlike other grassland-type ecoregions in the Great Plains because of the close proximity to nearby high forested mountains which feed the region with many perennial streams, resulting in a different mosaic of terrestrial and aquatic fauna. Most of the region is farmed and many parts of the valleys have been irrigated. Grazing of beef cattle and sheep is prevalent in the region, even in the forested parts of the foothills. A portion of the Bank is also located in the Northern Rockies ecoregion. This area is an ecoregion of high, rugged mountains. Although alpine characteristics, including numerous glacial lakes, are found in the higher elevations, the region is not as high nor as snow and ice covered as the Canadian Rockies. The mosaic of vegetation that presently and originally covered the region is different than that of the Middle Rockies. Although Douglas fir, subalpine fir, Englemann spruce, and ponderosa pine are characteristic of both northern and middle regions, western white pine, western red cedar, and grand fir were and are common in the Northern Rockies, but not the

Middle Rockies. Mining activities have caused stream water quality problems in portions of the region. See Figure 2 below for an illustration of the Bank's landscape position.

Property Legal Description and Ownership

As noted above, the Bank is located on the LF Ranch, which is an assemblage of various parcels owned by a number of persons and business entities, but all of which are members of the Pierce Family. The Bank is located on the following parcels:

MSSMB parcel 1 (S19-T19N-R08W) is referred to as the "Section 19" or "Upper Smith Creek Tract" and encompasses 640 acres of land located in Section 19 at the western edge of the ranch. This parcel is owned by Ben and Penelope Pierce of the Pierce Family (Figure 3);

MSSMB parcel 2 (S06-T19N-R07W) is referred to as the "Butler Tract" and encompasses 640 acres of land located near the eastern boundary of the ranch and contains Duval Creek as well as Smith Creek. This parcel is owned by Skunk Creek Company LLC which is in turn owned by the Pierce Family (Figure 4).

MSSMB parcels 3 & 4 (S32-T20N-R07W) are referred to as the "Lower Smith Creek Tracts" and encompass a 40-acre parcel and an adjacent 120-acre parcel through which Smith Creek runs as it leaves the property. These parcels are owned by Haystack LLC which is in turn owned by the Pierce Family (Figure 4).

MSSMB parcel 5 (S11-T19N-R07W) is referred to as the "Chisolm Tract" or the "Elk Creek Parcel" and encompasses 496 acres of land through which Elk Creek flows. This parcel is owned by Haystack LLC which is in turn owned by the Pierce Family (Figure 5).

Summary information about the specific ownership of each parcel can be found in Exhibit 1.

Sponsor's Qualifications

The Bank Sponsor is uniquely qualified to establish and operate this mitigation bank by virtue of its ownership and financial resources. East Front LLC is owned in part by Skunk Creek Company LLC (whose members include Ben Pierce), and in part by Legacy Ranch Partners II, LLC, owned equally by Ben Pierce and David Patrick. David Patrick has developed the only approved and active wetland/stream mitigation banks in Montana, while Ben Pierce, formerly state director of The Nature Conservancy (TNC) in Wyoming and co-director of TNC in Montana, has extensive experience with landscape-scale conservation initiatives throughout the Inter-Mountain West.

Point of contact for the Sponsor is Ben Pierce. The Sponsor has assigned as its agent David Patrick of Eco-Asset Management, LLC.

Figure 1. Missouri-Sun-Smith Mitigation Bank location

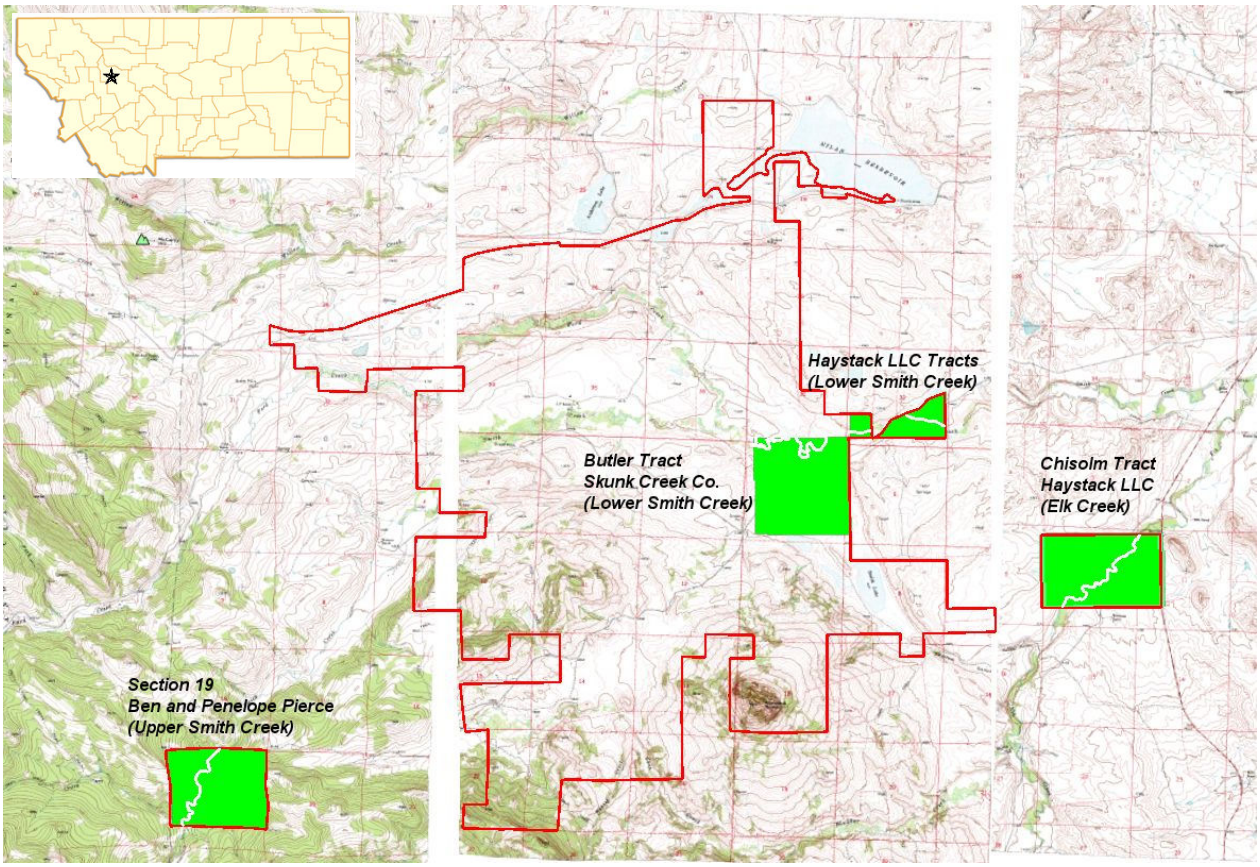


Figure 2. Aerial photograph of Bank site

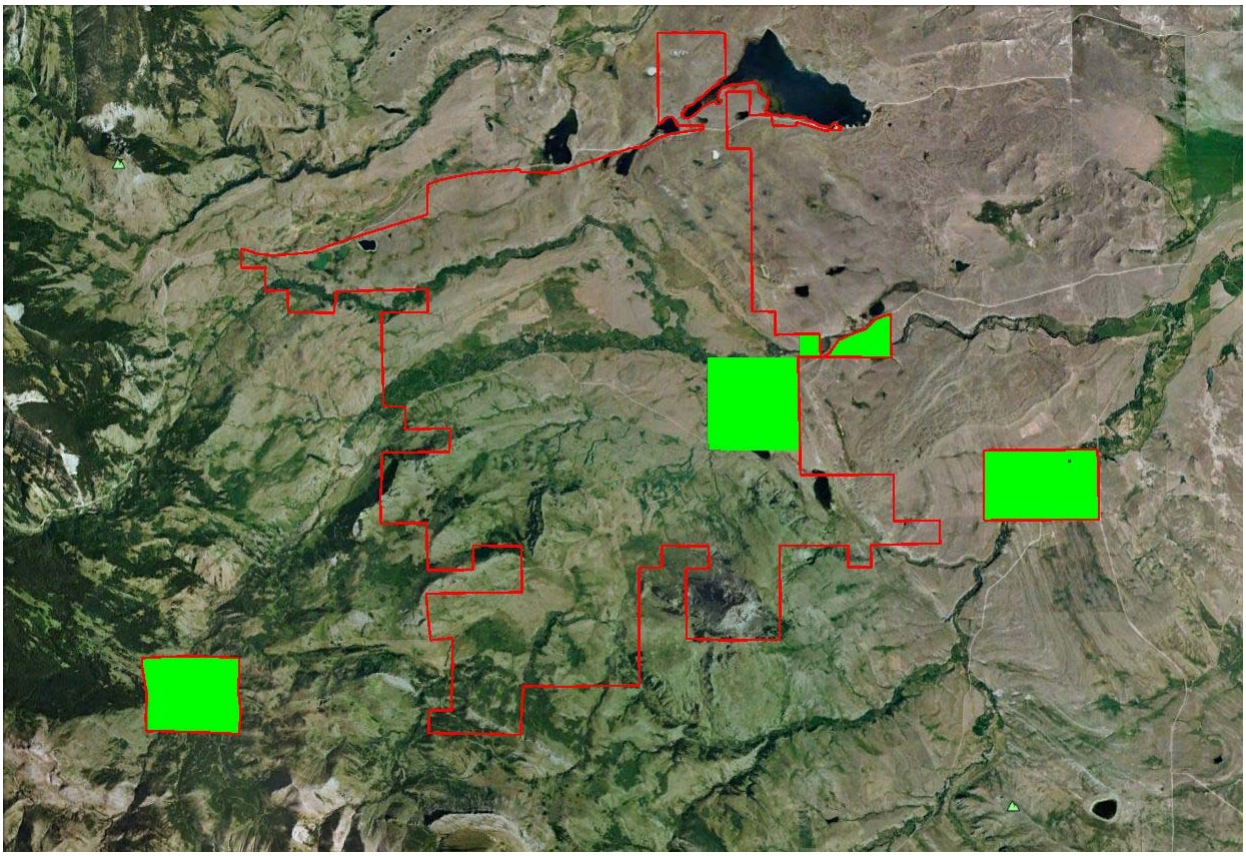


Figure 3. Section 19 / Upper Smith Creek layout

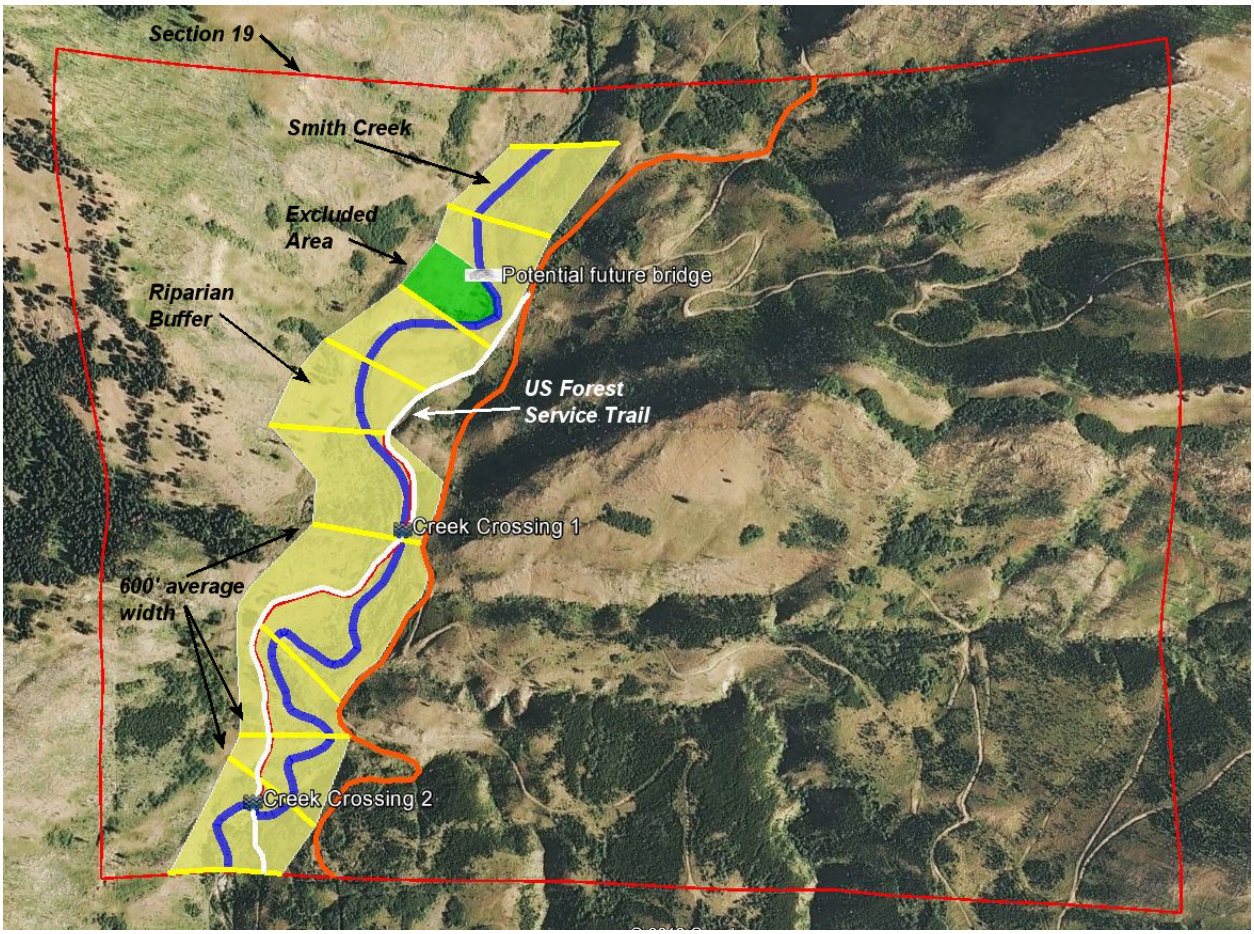


Figure 4. Lower Smith Creek layout

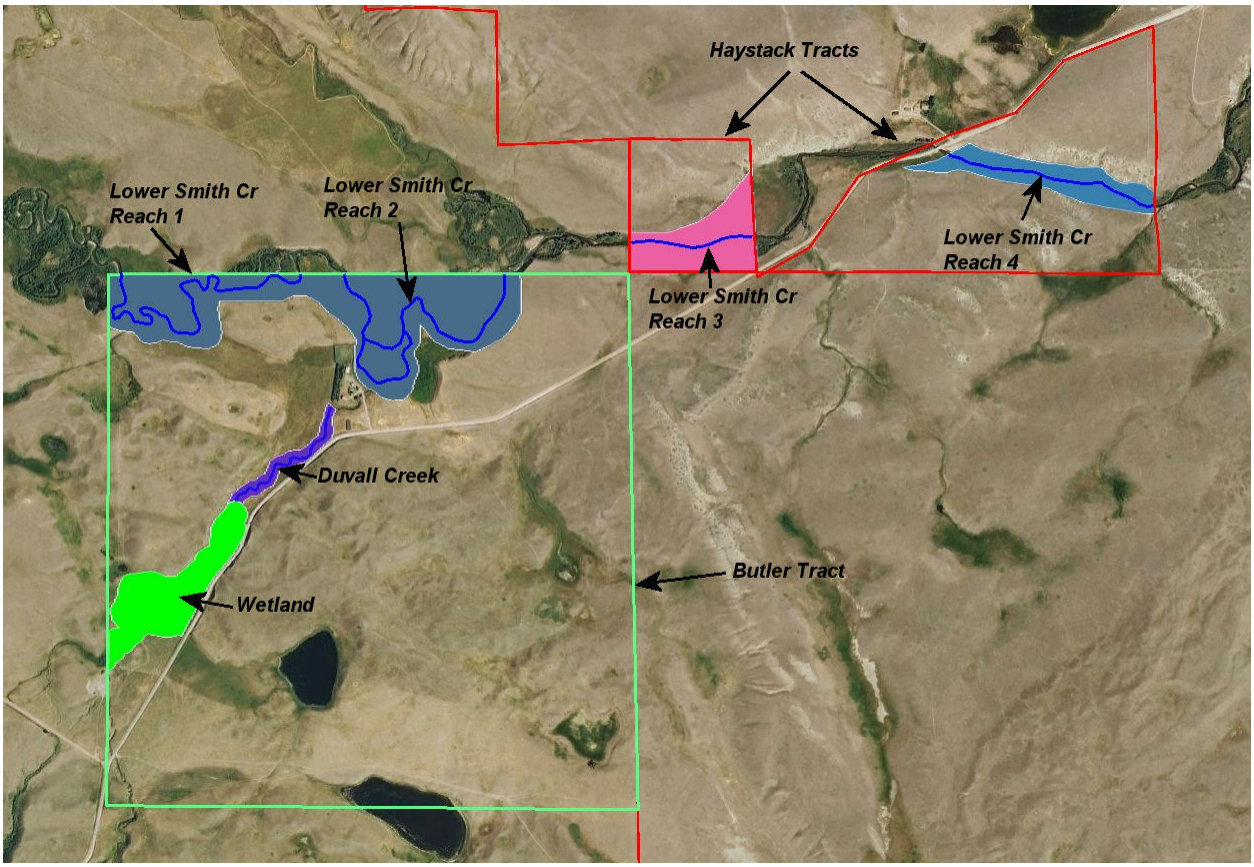
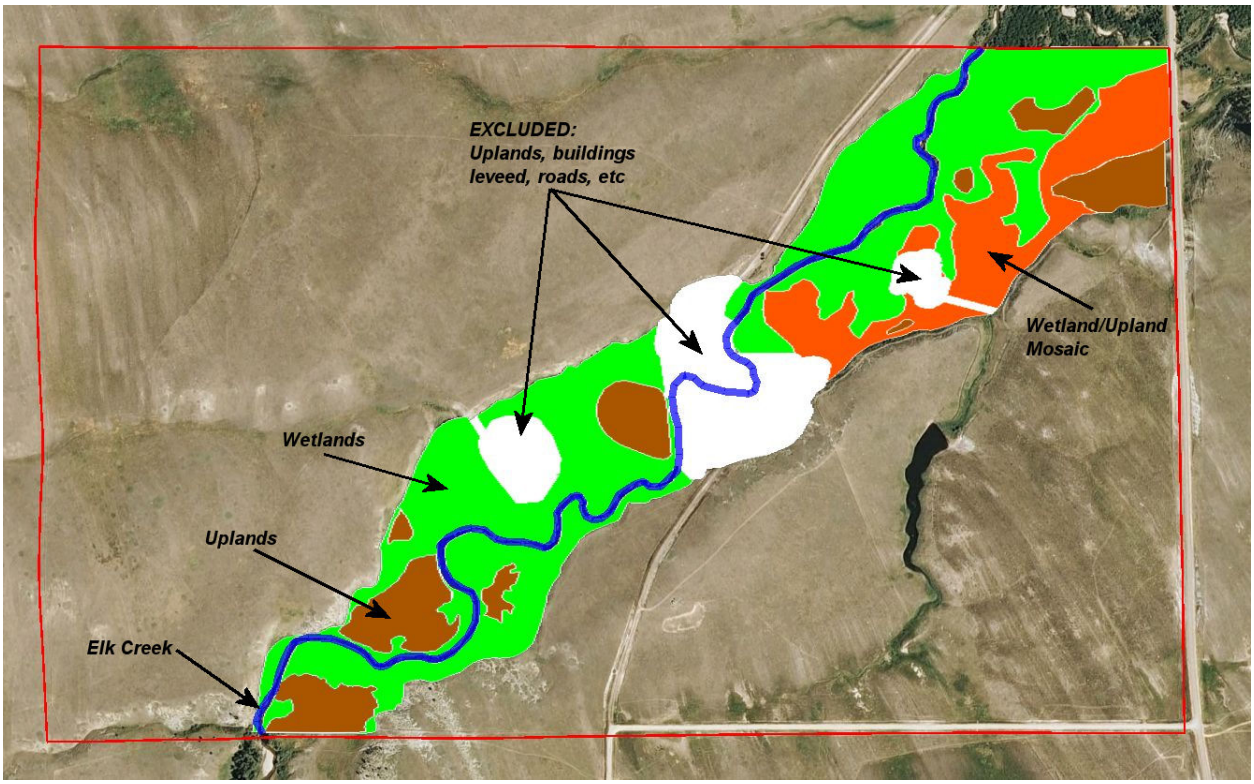


Figure 5. Chisolm Tract / Elk Creek layout



Bank Goals and Objectives

Purpose and Objectives

The purpose of the Missouri-Sun-Smith Mitigation Bank is to create a commercial, multiple-user mitigation bank in the Missouri-Sun-Smith Major Watershed Basin (primary service area) and Teton watershed (secondary service area) (collectively, the "Service Area"). The "Mitigation Bank Instrument" (MBI) will establish guidelines and responsibilities for the establishment, use, operation, and maintenance of the Bank as prescribed in 33 CFR 332 (the "Federal Rule"). In general, the Bank will be used for compensatory mitigation for unavoidable impacts to waters of the United States, including wetlands, that result from activities authorized under Section 404 of the Clean Water Act (the "CWA"), Section 10 of the Rivers and Harbors Act and Section 75-5-401 of the Code of Montana, provided such activities have met all applicable requirements and are authorized by the appropriate authority.

Objectives for the Bank include the preservation of ecologically important streams and wetland habitat, restoration and enhancement of existing streams and wetlands plus surrounding and integrated uplands in cases where degradation has occurred, and creation of wetlands in areas where they can be naturally maintained.

General Need for the Mitigation Bank

Compensatory mitigation involves actions taken to offset unavoidable adverse impacts to wetlands, streams and other aquatic resources authorized by Clean Water Act section 404 permits and other Department of the Army (DA) permits. As such, compensatory mitigation is a critical tool in helping the federal government to meet the longstanding national goal of ‘‘no net loss’’ of wetland function. For impacts authorized under section 404, compensatory mitigation is not considered until after all appropriate and practicable steps have been taken to first avoid and then minimize adverse impacts to the aquatic ecosystem (i.e., the CWA Section 404(b)(1) Guidelines).

Increasing development pressure within the Service Area is affecting important stream and riparian corridors and wetlands. Currently there are no mitigation bank credit options for mitigating impacts to riparian corridors and wetland habitats in these regions. The establishment of a mitigation bank, use of which is the stated preference for mitigation (33 CFR 332), is needed to compensate for unavoidable impacts which result from development in the Service Area.

Proposed Geographic Service Areas

The proposed Primary Geographic Service Area is the Missouri-Sun-Smith Major Basin (MDT District 7, including HUCs 10030101 through 10030105); a Secondary Service Area of the Teton Watershed (HUC 10030205) is also proposed. The Service Area encompasses both the Missouri River mainstem as well as its tributaries, from just below its headwaters to its

confluence with the Teton River. This Service Area is designed to provide the Bank the best opportunity to fulfill the watershed approach prescribed by the Federal rule. The primary service area was determined by selecting an area that is large enough to support an economically viable mitigation bank while ensuring that appropriate aquatic resources provided by the Bank will effectively compensate for adverse environmental impacts across the entire service area. The secondary service area was determined by reviewing the Montana Natural Heritage Program's "Montana's Rocky Mountain Front" report, as well as the ecoregions as mapped and described in Omernick (1995) and Bailey (1995). The combination of grasslands, forest and wetland/riparian resources is very similar between the landscape occupied by the LF Ranch (Bank site) and the Teton watershed (Figure 6 below). The geographic service area is graphically described in Figures 7 and 8.

Any aquatic resource impacts which occur within the described service areas, subject to Corps approval, in consultation with the IRT, will be eligible for credit withdrawal from the Bank.

Figure 6 – Secondary Service Area – Ecoregion similarities

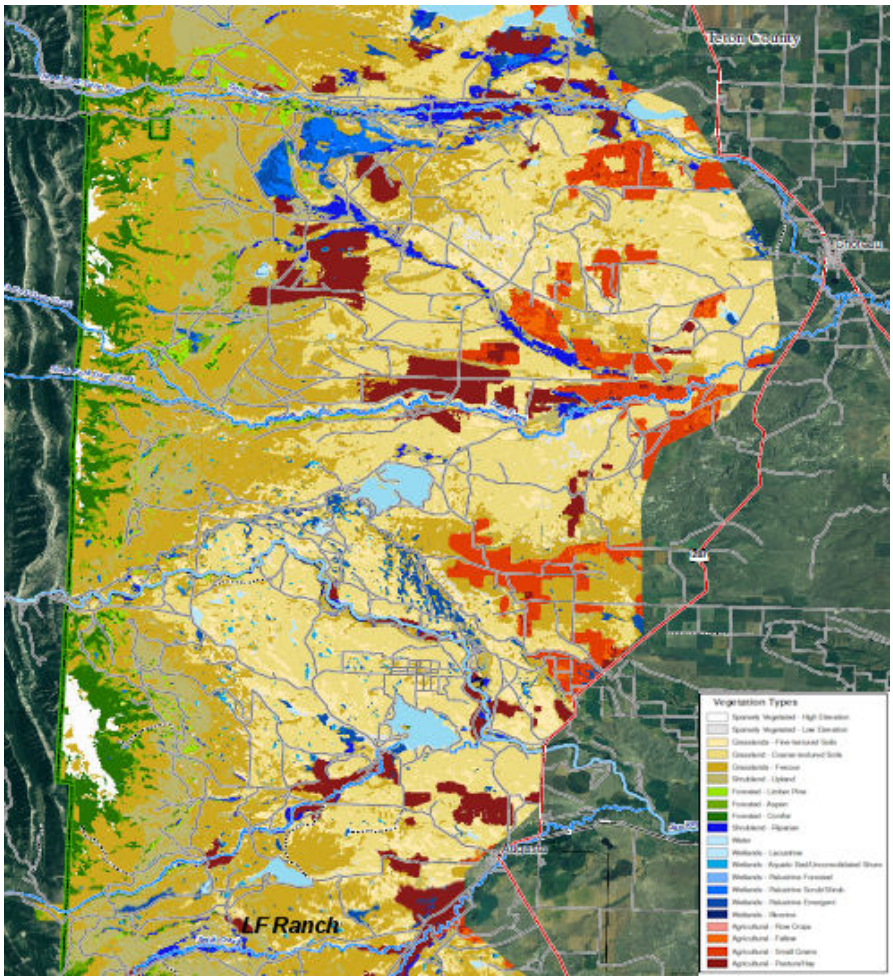


Figure 7 – Missouri-Sun-Smith Primary GSA

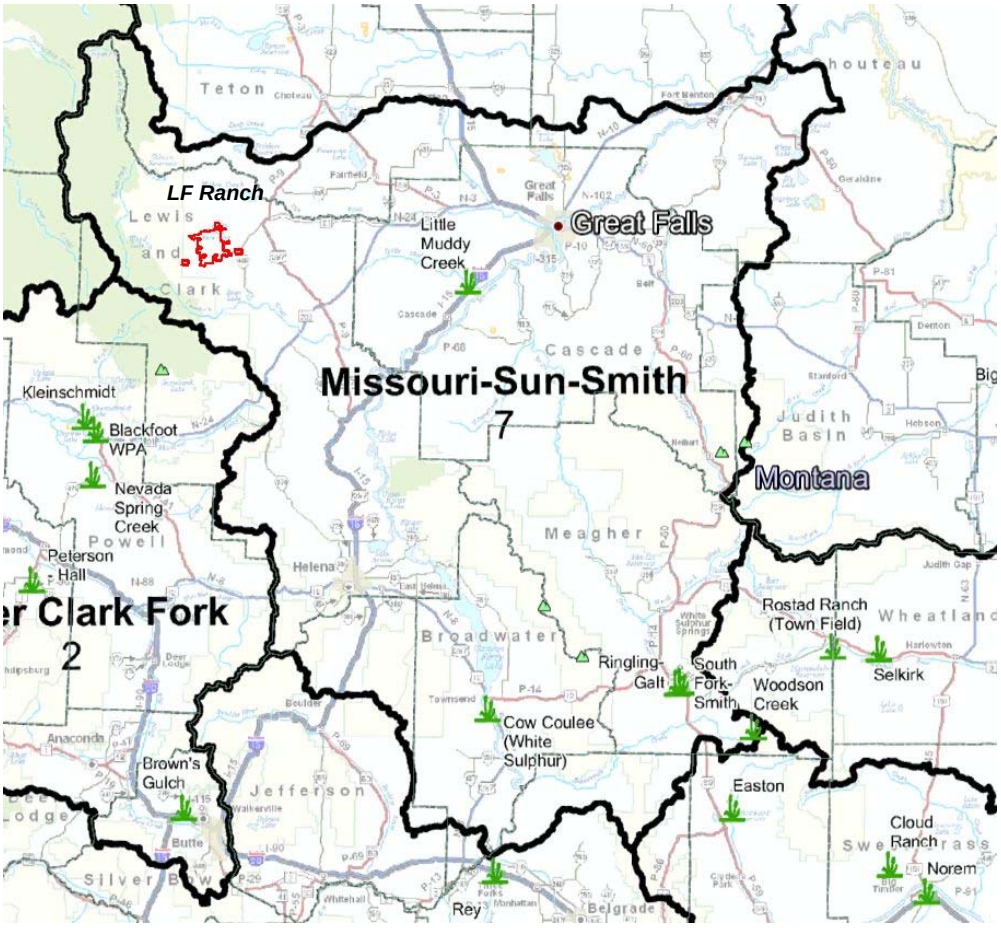


Figure 8 – Missouri-Sun-Smith Secondary GSA – Teton River 8-digit HUC

Proposed Number and Types of Credits

Methods

Methods for calculating stream and wetland credits will be as follows:

- Streams – The current (at the time of Bank approval) Montana Stream Mitigation Procedure (MT SMP) will be used to calculate credits which result from the preservation, enhancement and restoration of stream and riparian resources in the Bank.
- Wetlands – Montana Department of Transportation's Montana Wetland Assessment Method (2008) will be used to calculate credits which result from the restoration/rehabilitation of jurisdictional wetland areas in the Bank. In addition, the Omaha District mitigation guidance will be used to calculate wetland credits generated by (1) the preservation of wetlands; and (2) the preservation and restoration/rehabilitation and management of upland buffers and inclusions.

Stream and Riparian Credits

Previous management of the LF Ranch has included intense livestock grazing along most riparian and wetland areas. These areas will be excluded from grazing in perpetuity except as provided for in the long-term management plan for the Bank area.

The stream reaches included in the Bank will be managed for high "Sustainable" factors as defined in the NRCS Riparian Assessment Method, to include livestock exclusion, bank and near bank planting with stabilizing vegetation as needed, and improvement of fish passage when appropriate through reach improvement methods outlined in this Prospectus. Stream side riparian zones will be enhanced through supplemental planting of high quality native vegetation and, in the cases of converting agricultural fields to riparian habitat, full restoration of the vegetation community including all classes of native vegetation.

Under the May 2010 MT SMP, the enhancement, improved management and protection of approximately 27,337 linear feet of stream will yield 71,747 credits; while the restoration, enhancement and protection of adjacent riparian buffer, varying in width from 150 feet to 600 feet, will yield 28,599 credits, for a total of 100,346 credits (Table 1 and Exhibit 2).

Wetland Credits

Rehabilitation and management of existing jurisdiction wetlands on the Chisolm Tract (Elk Creek) and the Butler Tract (Duvall Creek) will include restoration of natural hydrology, nuisance species control and supplemental planting with native wetland species to yield high Floristic Quality Index ratings. Within the Elk Creek wetlands there are two assessment areas: (1) near the creek with relatively good quality and functional values; and (2) the "meadow" area that is a mosaic of wetlands and uplands that is in very poor condition. For the Duvall Creek wetlands, these hydric areas rise as potentially spring-fed wetlands (currently drained) that serve as the headwaters of this short tributary reach to Smith Creek.

Wetland crediting will be achieved through the means described further below and accounted for by way of the MDT's MWAM (2008) calculations. Existing wetland functional values are as

follows: Duvall Creek wetlands (12.2 Ac) – 19% of capacity, with a goal of 69%; Elk Creek riparian wetlands (76.4 Ac) – 46% of capacity, with a goal of 81%; and Elk Creek meadow wetlands (4.4 Ac) – 10% of capacity, with a goal of 73%. Total wetland credits to be generated by the restoration/rehabilitation of these wetlands will be 35.612. See Exhibit 3 for MWAM summary tables and forms.

Also included in the crediting are 56 acres of upland buffers and inclusions that are critically important to the aquatic functions of the adjoining wetlands. These areas will yield an additional 11.225 credits, or 24% of the total wetland credits proposed (Table 1).

Table 1 – Proposed credits types

CREDITS

	Stream	Riparian	Wetland	Upland
Streams/Riparian Buffers				
Smith Creek, Section 19	14,017	7,573		
Smith Creek, Lower	30,791	14,608		
Duvall Creek	5,066	1,934		
Elk Creek	21,873	4,484		
Wetlands/Upland Buffers				
Smith Creek, Section 19				
Smith Creek, Lower				
Duvall Creek			6.1	0.45
Elk Creek				
Wetland			26.74	
Upland				6.4
Mosaic - Wet			2.772	
Mosaic - Up				4.375
	71,747	28,599	35.612	11.225
	100,346 Total Stream Credits		**46.837 Total Wetland Credits**	

Proposed Credit Release Schedule

It is proposed that 30% of the 46.837 wetland credits (14 wetland credits) will be available immediately for assignment to permitted projects as pre-certified credits; and the remaining 70% (32.837 credits) will be available as the Bank is shown to be trending toward success. Likewise, 30% of the 100,346 stream/riparian credits (30,104 credits) will be available immediately, while the remainder will be released based on successful trends toward meeting all performance standards. In both cases, remaining credits are projected to be released over a period of five years following execution of the Mitigation Banking instrument.

Restoration Plans

In general terms, proposed habitat improvement and protection activities include stream bank stabilization to reflect a more natural geomorphology; revegetation of agricultural lands and riparian buffers; reduction in grazing pressure; and restoration of hydrology in floodplain areas.

This initial plan presents restoration and rehabilitation activities that will be conducted as the implementation phase of the mitigation bank. Other activities that are required to complete the mitigation bank include:

- Establishment of real estate protective instruments;
- Identification of a long-term manager to ensure proper functioning of the restored habitats;
- Final fencing and livestock management infrastructure installation.

Section 19 (Upper Smith Creek)

Following removal of nuisance species, revegetation will occur. In some heavily grazed areas this will consist of moderate to heavy seeding with a diverse native seed mix (see Table 6) at a rate of 40 lbs. per acre. Any disturbed areas will be seeded and covered with a biodegradable erosion control matting (NA Green BN125 or equivalent). This matting will be installed per manufacturer's specifications. The riparian area (within 75 to 525 feet on either side of the stream channel) will be planted with various species of willows and other shrubs. All work will be overseen by a professional with experience in revegetation and knowledge of stream channel morphology.

Lower Smith Creek (Butler and Haystack Tracts)

Stream Bank Work

The proposed activities on the Lower Smith Creek parcels are:

1. At 10 of the locations shown on Figure 9, the Smith Creek stream banks will be stabilized using the treatment shown in Figure 10. At the eleventh location, stabilization will consist solely of revegetation. The approximate lengths of stream bank to be treated are shown in Table 2;
2. Shallow excavation of inlet to abandoned meander near corrals; this will restore natural flood regime in the abandoned meander. Volume of excavated material is estimated to be 50 to 100 cubic yards. This material will be removed from the site and disposed of in an upland area. Modifications to the corrals and fencing may be required and will be undertaken in consultation with the ranch manager;
3. Active control of noxious weeds and restoration of vegetative community in riparian areas along the various reaches of Smith Creek.

Total length of stream bank stabilization at this location is approximately 3,660 feet.

Table 2. Stream bank stabilization sites
Lower Smith Creek tract

Site Number	Approx. Length (ft)
1	350
2	300
3	370
4	200
5	500
6	140
7	350
8	125
9	320
10	245
11	760

Riparian Revegetation

The revegetation specifications for each stabilization site include willow planting 1 foot below the high water mark. Willow stakes should be no more than 2-3 feet in length and measure roughly the diameter of a man's finger. Willow stakes should be planted 5 feet on center along all stream bank stabilization prescriptions on Lower Smith Creek. As many of the resident shrub thickets on Lower Smith Creek are severely degraded, willow stakes from other areas on the LF Ranch may be the best option. At the high water mark planting will include bare-root and/or gallon-sized shrubs approximately 10 feet on center.

Duvall Creek

Grazing pressure in this vicinity of Duvall Creek has limited the growth of native willows and some native herbaceous plants. Hummocks formed by domestic grazing animals are present, but not widespread throughout this wetland. The health of native plant communities is expected to improve and the extent of these communities is expected to increase if grazing pressure is reduced. Thickets of woody vegetation are already established in some areas on-site. However, along several areas of the wet meadow fringe (most notably in flat areas easily accessible by livestock) woody riparian vegetation is largely absent.

Grazing Management

The management plan will include ceasing livestock grazing along the wetland fringe to allow for natural recruitment of resident vegetation.

Figure 9. Lower Smith Creek and Duvall Creek restoration areas

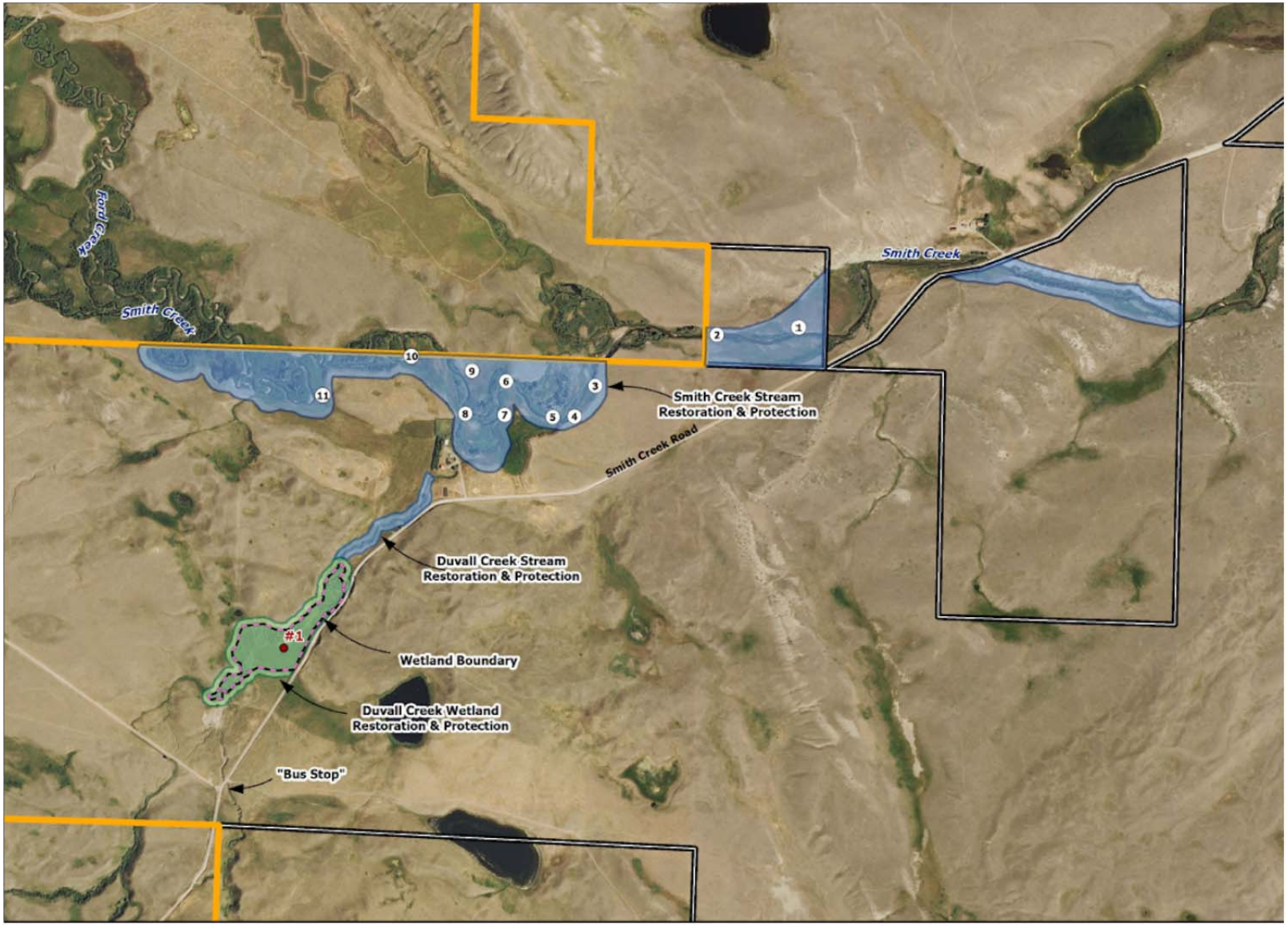
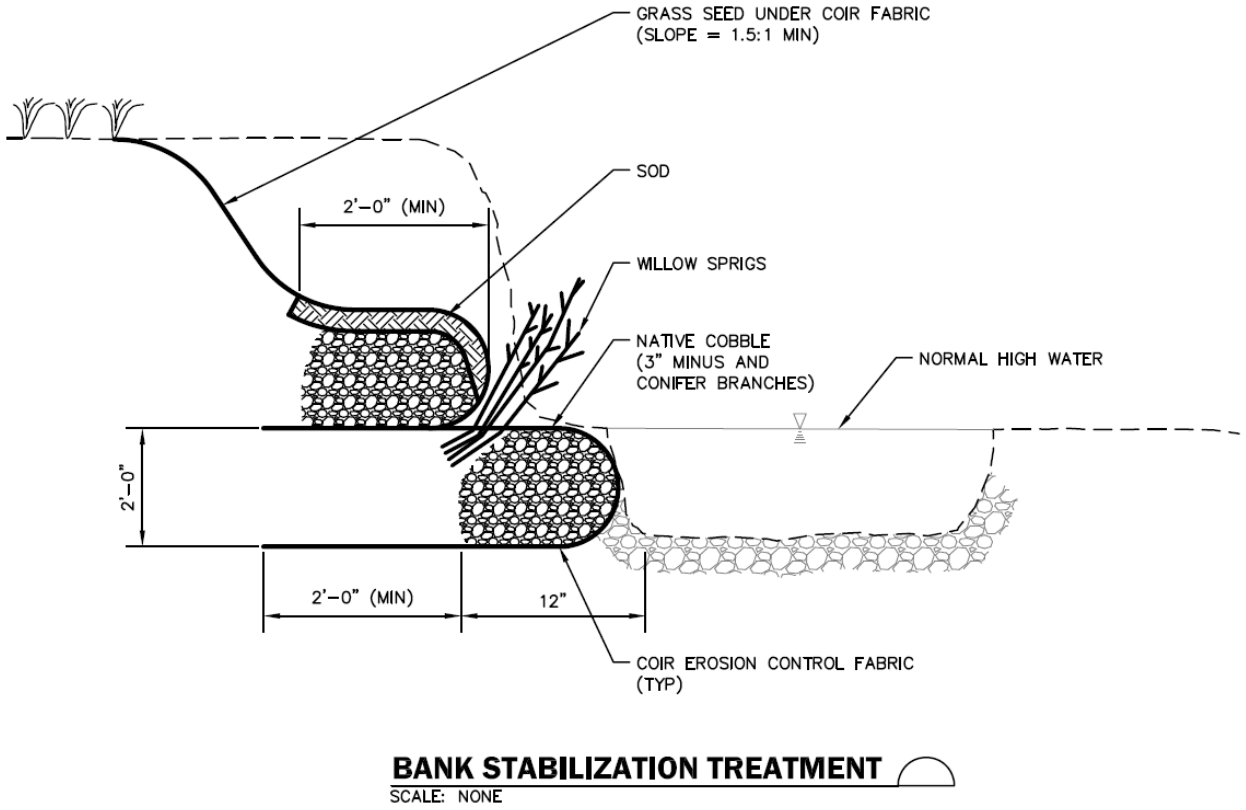


Figure 10. Typical section of bank treatments



Riparian Revegetation

In addition to eliminating grazing pressure, on-site supplemental plantings adjacent to Duvall Creek will take place to facilitate recovery of this area (see Figure 9). Willow stakes will be planted along the southern most boundary of the wetland fringe (approximately 400 feet). All willow stakes can be collected from adjacent willow thickets on-site. Contractors will need to collect willow stakes to plant this stretch of stream bank. Willow stakes should be no more than 2-3 feet in length and measure roughly the diameter of a man's finger. Willow stakes should be planted 5 feet on center with approximately 3 feet between rows. Planting in each of the upland islands will contain the species composition shown in Table 3.

Table 3. Plant specifications for Duvall Creek

Species	Number Plants per Island	Number of Islands	Total Number of Plants
Rocky mountain juniper (*Juniperus scopulorum*)	10	3	30
Western choke cherry (*Prunus virginiana)*	30	3	90
Douglas hawthorn (*Crataegus douglasii)*	30	3	90
Woods Rose (*Rosa woodsii)*	50	3	150
Western Snowberry *(Symphoricarpos albus)*	50	3	150
		TOTAL	**510**

Additional work includes active control of reed canary grass and planting of native shrubs and cottonwoods along the lower reaches of Duvall Creek, and active control of noxious weeds and restoration of vegetative community in wetland areas along upper Duvall Creek.

Chisolm Tract / Elk Creek

Extensive stands of native herbaceous and woody plants are prevalent across portions of the Chisolm Tract. Grazing pressure from domestic livestock is also evident across the Chisolm Tract. In general, the density and diversity of native plant communities increases, and the damage to native vegetation decreases, the further upstream one travels along Elk Creek. Low density noxious weeds infestations, most notably leafy spurge (*Euphorbia esula*) are also present on the property. Previous owners of the Chisolm property cleared much of the native trees and shrubs from the lower half of the property, and from portions of the upper half, so the area could be used as hay fields. This area is now devoid of native woody vegetation and dominated by aggressive non-native pasture grasses.

Figure 11 shows the Chisolm Tract encompassing Elk Creek. On the upper portion (west side) of this tract the proposed activities are grazing reduction, revegetation of upland areas that appear to have been cleared for haying, and modest enhancements to the riparian and wetland vegetation communities.

On the lower portion (east side) of this tract the following activities are proposed:

1. Protection/enhancement of Elk Creek and a 75-foot buffer;
2. Discontinue use of the area as pasture land for grazing;
3. Reconnection of the creek to the floodplain by removal of impeding berms and levees;
4. Implement a planting plan with specific native plant assemblages suited to wetland, upland and mosaic sites (see below);
5. Excavate three areas in the floodplain to help increase seasonal flooding in pasture and thereby improve wetland conditions;
6. Eradicate infestations of Leafy spurge across all sites to limit subsequent invasion of areas disturbed by restoration activities.

Grading and Restoration of Floodplain Hydrology

Figure 11 shows the location of three areas of excavation on the lower Chisolm parcel. The objective of this grading at each site is to increase the frequency that flood flows access floodplain areas. This will improve wetland hydrology and will attenuate flooding downstream by storing flood water in the floodplain for gradual release as the runoff height recedes.

At all three sites, grading will be overseen by a restoration professional. Certain field modifications may be required in order to help ensure success of the project. All excavated material will be disposed of at a site that is not a jurisdictional wetland. Topsoil will be retained and all disturbed areas will be covered with retained topsoil and seeded (see Table 6 for seeding specifications). Excavated areas will be grassy swales with gentle slopes (20H:1V or as specified by the oversight professional). Certain portions of these grassy swales may be revegetated with scalped sod mats from nearby wetland areas.

Grazing Management

Reduced grazing pressure across the entire property will facilitate natural recruitment of resident vegetation. The most effective way to do this would be to completely exclude domestic livestock from the area. Alternatively, by limiting grazing to times when vegetation is less susceptible to damage (e.g. late-fall through winter) or by utilizing grazing rotations (e.g. graze one year, rest one year) damage to resident native vegetation may be sufficiently reduced to facilitate an increase of native woody vegetation on-site.

The density of leafy spurge on this property is low enough that eradication of the plant on the property is an achievable goal. Aggressive treatments of leafy spurge infestations for several years are recommended. As restoration goals are achieved, and the density of native trees and shrubs increase, it will become more difficult to effectively treat infestations.

Several active beaver lodges are present on the property. As beavers proliferate their activity will aid efforts to restore wetlands and riparian vegetation on site. No efforts will be made to control beaver populations apart from appropriate management directed at yielding a natural, ecologically sustainable system.

Riparian Revegetation

In the early spring, before bud break, two rows of willow stakes will be planted along the eroded stream bank (approx. 300 feet in length) in the northern half of the property (Figure 11). All willow stakes can be collected from adjacent willow thickets on-site. Contractors will need to collect willow stakes to plant this stretch of stream bank. Willow stakes should be no more than 2-3 feet in length and measure roughly the diameter of a man's finger. Willow stakes should be planted 5 feet on center with approximately 10 feet between rows. Stakes should be driven into the cutbank, below the high water mark.

Wetland Restoration

Reducing or excluding domestic livestock and proliferation of beaver activity on-site will initiate passive restoration of wetland plant communities across the Chisolm property. However, complete restoration of the area through passive means would likely take many decades. Several planting prescriptions will be employed to advance the restoration of native habitats across the Chisolm property.

Following excavation of the three sites described above disturbed areas will be reseeded per specifications shown in Table 6 to limit invasion by non-native invasive plants. The seed mix should be applied liberally at a rate to be determined by the restoration oversight professional. It is anticipated that no more than 100 pounds of seed will be required for the Chisolm parcel.

Habitat values on site will be further enhanced by incorporating several "islands" of woody vegetation in the upland and mosaic areas across the property. These islands of native woody vegetation would increase cover in the area but successful establishment would be dependent on total exclusion of domestic grazers. The restoration strategy will include planting islands of vegetation no greater than 100 feet in diameter (Figure 11). The shape and location of these islands should be variable based on the micro-topography and drainage patterns on-site to ensure maximum survival of planted vegetation. To maximize survivability in this non-irrigated setting all species should be planted in mid-fall or early spring (as precipitation dictates) as saplings (1-2 year old). Planting densities are slightly inflated to account for limited mortality of saplings.

Planting in each of the upland islands on the Chisolm parcel will contain the species composition shown in Table 4. Planting in each of the mosaic areas on the Chisolm Tract will contain the species composition shown in Table 5. Black Cottonwood, aspen and to a lesser extent Bebb's willow are all susceptible to browse damage from native ungulates. These species should be protected by cages for a minimum of two full seasons following planting to ensure successful establishment.

Table 4. Plant specifications for Chisolm Tract / Elk Creek upland islands

Species	Number of Plants per Island	Number of Islands	Total Number of Plants
Douglas fir*(Pseudotsuga menziesii*) and/or Rocky Mtn. Juniper *(Juniperus scopulorum*)	10	14	140
Western choke cherry (*Prunus virginiana)*	30	14	420
Douglas hawthorn (*Crataegus douglasii)*	30	14	420
Woods Rose (*Rosa woodsii)*	50	14	700
Western Snowberry *(Symphoricarpos albus)*	50	14	700
		TOTAL	**2380**

Table 5. Plant specifications for Chisolm Tract / Elk Creek mosaic areas

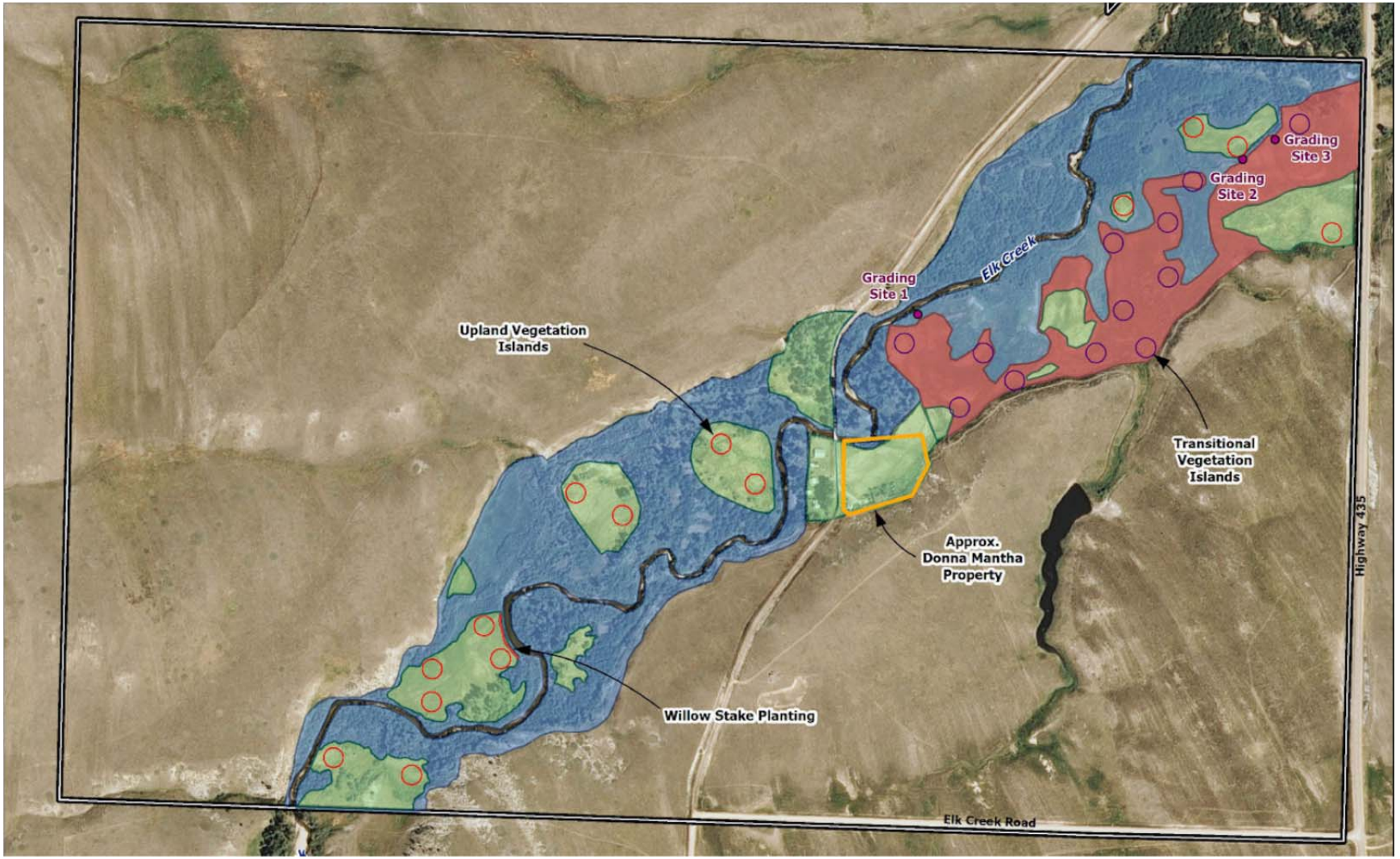
Species	Number of Plants per Island	Number of Islands	Total Number of Plants
Black Cottonwood *(Populus trichocarpa*)	15	16	240
Aspen (*Populus tremuloides*)	15	16	240
Bebbs willow (Salix bebbiana)	20	16	320
Western choke cherry (*Prunus virginiana)*	20	16	320
Douglas hawthorn (*Crataegus douglasii)*	20	16	320
Woods Rose (*Rosa woodsii)*	40	16	640
Western Snowberry *(Symphoricarpos albus)*	40	16	640
		TOTAL	**2720**

Table 6. Seed specifications for all disturbed areas

Species	Pounds per 50 lb. bag
Slender Wheatgrass (*Agropyron trachycaulum*)	20
Western Wheatgrass (*Agropyron smithii*)	15
Basin Wildrye (Elymus *cinereus*)	10
Sandbergs Bluegrass (*Poa sandbergii*)	3
Prairie June Grass (*Koelaria micrantha*)	2
TOTAL LBS	**50**

A variety of native forbs could be added to this mix for minimal additional costs. Multiple research studies have shown the addition of native forbs to restored herbaceous plant communities limits subsequent invasion by noxious weeds. We recommend inclusion of the following forbs: White Yarrow (*Achillea millefolium*), Beebalm (*Monardia fistulosa*), Blanket flower (*Gallardia aristata)* and Fringed Sage *(Artemesia frigida).*

Figure 11. Elk Creek restoration areas



Mitigation Bank Establishment and Operation

The Missouri-Sun-Smith Mitigation Bank will be constructed pursuant to the aims and goals of the Federal Rule for the establishment, use, and operation of mitigation banks (Federal Register, 2008) and the banking guidance of the Omaha District U.S. Army Corps of Engineers. The Bank Sponsor agrees to perform all necessary work, in accordance with the provisions of the MBI, to establish and maintain aquatic habitats and associated upland buffers, as more fully described in the MBI's Bank Development Plan, until it is demonstrated to the satisfaction of the agencies represented on the IRT (acting through the Chair[s]) that the project complies with all provisions contained therein, or until all credits are sold, whichever is later. Work as described above shall include implementing all aspects of the restoration plans, as well as requisite monitoring, maintenance and management described below.

Permits

The Bank Sponsor will obtain all appropriate permits or other authorizations needed to construct and maintain the Bank, prior to beginning any of the Work. This Prospectus or the MBI to follow do not fulfill, substitute for, or replace such authorization.

Monitoring, Maintenance and Management

Long-term Management

It is the Sponsor's intent to name a third-party, long-term manager acceptable to the Corps, in consultation with the IRT, to be responsible for managing the Bank sites in perpetuity in accordance with the terms of a long-term management plan, the goals for which are provided below. The third party manager will also ensure compliance with real estate provisions, including the terms of the protective instrument. A detailed long-term management plan will be developed with the long-term manager and submitted to the Corps and IRT for review and approval before transfer of management responsibilities to the third party. The agreement between the Sponsor and long-term manager will specify that the long-term manager and its land stewards will provide oversight of management needs consistent with these goals and ensure full implementation of all protective instrument provisions. The agreement will further stipulate that costs associated with management of the Bank up to the limits of the financial assurances, will be borne by the Sponsor during the Bank operation phase from the Contingency Fund, and funded by the Long-Term Management endowment thereafter. Management Goals, Objectives and Process are as follows:

1. Maintenance in perpetuity of the Bank lands in the condition for which it was intended and for significant ecological and open space values as defined in Section 76-6-104 et seq Montana Code Annotated (MCA) and so as to provide significant, relatively natural habitat for native plants and wildlife;
2. Protection of the Bank lands in perpetuity so as to contribute to the ecological integrity of the watersheds and tributaries, and including protection of values for aquatic habitat including trout and other native fish, riparian plant communities, diverse waterfowl and other birds, deer, elk and other wildlife;
3. Identify, preserve and protect in perpetuity the open space character and related significant natural features and values;
4. To enhance, upon mutual agreement, and in the event of their degradation or destruction, to restore the open space and significant relatively natural features and values of the Bank lands utilizing the financial resources from the Long-term Management Fund and to include the case of unforeseen negative influences;
5. To conserve important habitat for wildlife, to protect rare and unique native plants, to conserve and restore unique aquatic habitat for native fish, and to conserve the diverse riparian and/or other vegetation communities and the wildlife inhabiting those communities;
6. To allow for the management of the Bank lands by providing access by all-terrain vehicles or horses, via trails and other means of access in a manner consistent with the restored and enhanced ecological functions and values established under this Agreement;
7. For instances where irrigation conveyances transect the areas within the Bank sites, to allow for the maintenance of such irrigation conveyances using all available best

management practices and other efforts to protect the ecological functions and values established under this Agreement;

8. To allow for the management of the Bank lands through use of approved biocides and controlled grazing, particularly in riparian zones, as approved by the Corps, in consultation with the IRT.

Monitoring and Maintenance

The project will be monitored annually using standard habitat monitoring techniques for a minimum of five years. Performance standards will be established against which the monitoring results will be compared to determine the level of success attained by the Bank. Maintenance efforts and adaptive management strategies will be employed to address any parameter for which the Bank is failing to meet performance standards in a timely fashion. The monitoring and maintenance plan for the Bank will include:

1. Montana USDA-NRCS Riparian Assessment Methodology (MT RAM);
2. MWAM (2008) parameters, measured in part by (3.) and (4.) below, as appropriate;
3. Greenline Method (Winward 2000) is used as a component of the MT RAM to describe stream-side vegetation communities;
4. Standard quantitative monitoring protocols (transects located to intersect a representative vegetation profile, broken into intervals to intersect community types, vegetation inventories of those intervals cataloging species and cover class, 100 m^2 x 10 m^2 belt transects for woody species, permanent photo-stations, etc.);
5. Scientific binomial nomenclature follows Dorn (1984).

Monitoring for the Bank shall be done annually for no less than five consecutive years, with Year 1 monitoring to be completed during the first full growing season following execution of the MBI Agreement. An annual report will be submitted to the Corps, and the Corps, in consultation with the IRT, may direct that monitoring be suspended after the submittal of the Year 5 monitoring report.

Maintenance efforts may include one or more of the following actions:

1. Wetlands
    - Use of appropriately labeled herbicides and/or biological controls to manage for nuisance species, including weeds and non-native grasses and herbs which lower the FQI for that area;
    - Maintenance of hydrologic features such as gates and check structures which facilitate maintenance of water movement in accordance with water rights;
    - Mending of livestock exclusion fences and related gates and crossings as needed.
2. Streams and Riparian Buffers

- Use of appropriately labeled herbicides and/or biological controls to manage for nuisance species, including weeds and non-native grasses and herbs which negatively affect the species diversity for that area;
- Maintenance of stream features such as pools, riffles and glides, to the extent such features are not developing in accordance to natural stream geomorphology;
- Mending of livestock exclusion fences and related gates and crossings as needed.

3. Upland Buffers
    - Use of appropriately labeled herbicides and/or biological controls to manage for nuisance species, including weeds and non-native grasses and herbs which negatively affect the species diversity for that area;
    - Mending of livestock exclusion fences and related gates and crossings as needed.

Adaptive management elements may be implemented in the event the Bank continues to fall short of performance standards. The Sponsor shall follow the adaptive management plans and implement appropriate remedial actions for the Bank in coordination with the Corps and IRT. In the event the Bank is not adequately meeting performance standards, the Corps, in consultation with the IRT, may require the implementation of one or more of the following actions:

1. Wetlands
    - Vegetation criteria – supplemental planting with high quality native wetland vegetation;
    - Hydrology criteria – address nature and source of failure (e.g. side ditches with unanticipated hydraulic effects);
    - FQI / Species Richness – supplemental planting with high quality native vegetation;
    - Exotic species – active weed management plan including manual removal, spraying and/or biological control;
    - Scrub-Shrub classification – supplemental planting with scrub-shrub classified plants.
2. Streams and Riparian Buffers
    - Geomorphology – stabilization of bank failures, modification of stream pattern, profile and/or dimension;
    - Bank-full events – modification of stream pattern, profile and/or dimension to effect bank-full event;
    - Riparian buffer vegetation – supplemental planting with high quality native vegetation;
    - Exotic species – active weed management plan including manual removal, spraying and/or biological control.
3. Upland Buffers

- Vegetation criteria – supplemental planting with high quality native vegetation;
- Exotic species – active weed management plan including manual removal, spraying and/or biological control.

Financial Assurances and Site Protection

Financial Assurances

The project will be assured of success and financial stability by way of a Contingency Fund in the form of a casualty insurance policy in the amount of $100,000, covering a significant portion of the restoration costs of the Bank during the implementation period, and by way of a Long-Term Management Fund in the form of a cash-in-escrow endowment in the amount of $50,000.

Site Protection

The Bank Area will be protected in perpetuity by way of a special condition to the 404 permit(s) required for the restorative work as provided for by District policy and precedent.

Water Rights

Pursuant to 33 CFR 332.8(d)(2)(vii)(B) and 33 CFR 332.8(u)(4), "Where needed, the acquisition and protection of water rights should be secured and documented in the instrument….". Bank Sponsor and the land owners, Haystack LLC, Skunk Creek Company LLC, and the Pierce Family generally, own, possess and/or have good and sufficient rights to the water sources, which are hereby committed to the support of the ecological functions inherent in the Bank's credits (Table 7).

Table 7. Example water rights for the Bank

Haystack LLC, Skunk Creek Company LLC, Pierce Family et al.			
WATER RIGHT	**USED FOR**	**AMOUNT**	**PLACE OF USE**
41K 95818	Irrigation	4.00 cfs	56.60 Ac
41K 96316-00	Irrigation	30.00 cfs	561 Ac
41K 11124-00	Irrigation	n/a	70 Ac
41K 96250-00	Irrigation	1.88 cfs	80 Ac

This is an example of available water rights, among others that are also components of the Bank lands. The Bank Sponsor and land owners warrant that the application of those rights to the intended uses, as expressed within this Prospectus and in the future Mitigation Bank Instrument, are in compliance with the Montana Department of Natural Resources and Conservation water rights, rules and policies and Montana water law.

Accounting Procedures

The Bank sponsor intends to establish and maintain a ledger to account for all credit transactions. Each time an approved credit transaction occurs, the Sponsor will promptly notify the District Engineer.

In addition, the Sponsor intends to establish and maintain an annual ledger report showing the beginning and ending balance of available credits and permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended). The Sponsor will submit the ledger report to the District Engineer, for distribution to the IRT members, in form and format for entry into RIBITS. The ledger report will be part of the administrative record for the Bank. Pursuant to the Federal Rule, it is anticipated the District Engineer will make the ledger report available to the public upon request.

Document Preparers

This Prospectus and supporting documents were prepared by:

- David Patrick, Principal, Eco-Asset Management, LLC
- Nola Freestone, Eco-Asset Management, LLC
- Paul Callahan, CP Callahan and Associates, Inc.

Exhibit 1

Land Ownership Information

Property Record Card
Tax Year 2013
Print

Summary

Primary Information

Property Category: RP
Subcategory: Real Property
Geocode: 05-2883-06-1-01-01-AG00
Assessment Code: 0000016974
Primary Owner:
SKUNK CREEK COMPANY
58 WOODMAN RD
NEW GLOUCESTR, ME 04260-3633
PropertyAddress: 7296 SMITH CREEK RD
AUGUSTA, MT 59410
COS Parcel:
NOTE: See the Owner tab for all owner information
Certificate of Survey:
Subdivision:
Legal Description:
S06, T19 N, R07 W, ALL
Last Modified: 4/26/2012 7:34:04 PM

General Property Information

Neighborhood: 771
Property Type: FR - Farmstead Rural
Living Units: 1
Levy District: 05-050201-4501
Zoning:
Ownership %: 100
Linked Property:

Linked Property	Link Type	
05-0000016974-001	Real Property/Personal Property Link	View

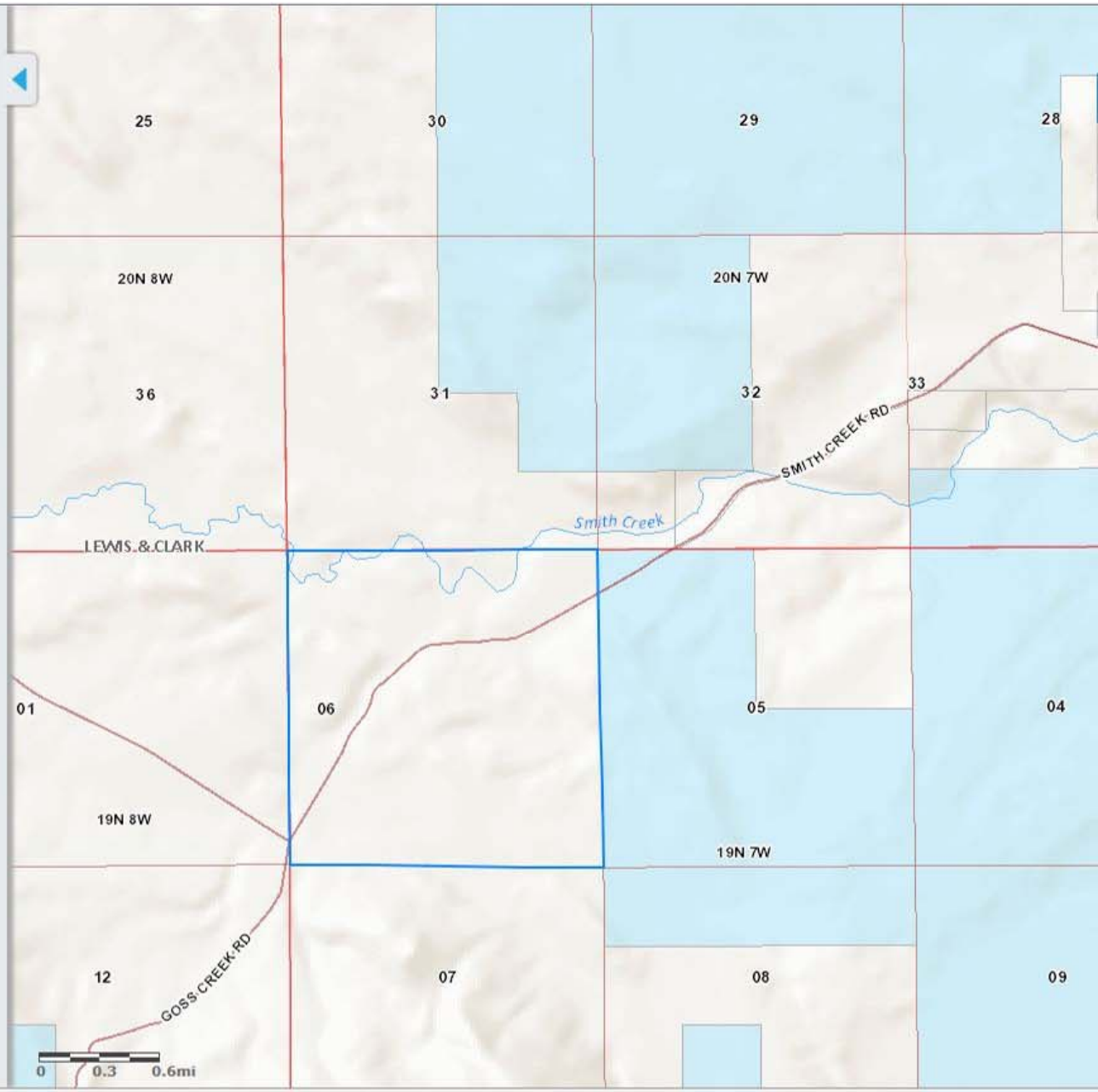
Exemptions:
No exemptions exist for this property
Condo Ownership:
General: 0
Limited: 0

Property Factors

Topography: 8
Fronting: 0 - None
Utilities: 0
Parking Type:
Access: 0
Parking Quantity:
Location: 0 - Rural Land
Parking Proximity:

Land Summary

Owners
Appraisals
Market Land Info
Dwellings
Other Buildings/Improvements
Commercial
Ag/Forest Land



Property Record Card
Tax Year 2013
Print

Summary

Primary Information

Property Category: RP
Subcategory: Real Property
Geocode: 05-3003-31-2-01-01-AG00
Assessment Code: 0000041704
Primary Owner:
PIERCE KATHERINE H
PO BOX 367
AUGUSTA, MT 59410-0367
PropertyAddress:
COS Parcel:
NOTE: See the Owner tab for all owner information
Certificate of Survey:
Subdivision:
Legal Description:
S31, T20 N, R07 W, SESE W2 W2SE
Last Modified: 4/26/2012 7:42:43 PM

General Property Information

Neighborhood: 771
Property Type: AR - Agricultural Rural
Living Units: 0
Levy District: 05-050201-4501
Zoning:
Ownership %: 100
Linked Property:
No linked properties exist for this property
Exemptions:
No exemptions exist for this property
Condo Ownership:
General: 0
Limited: 0

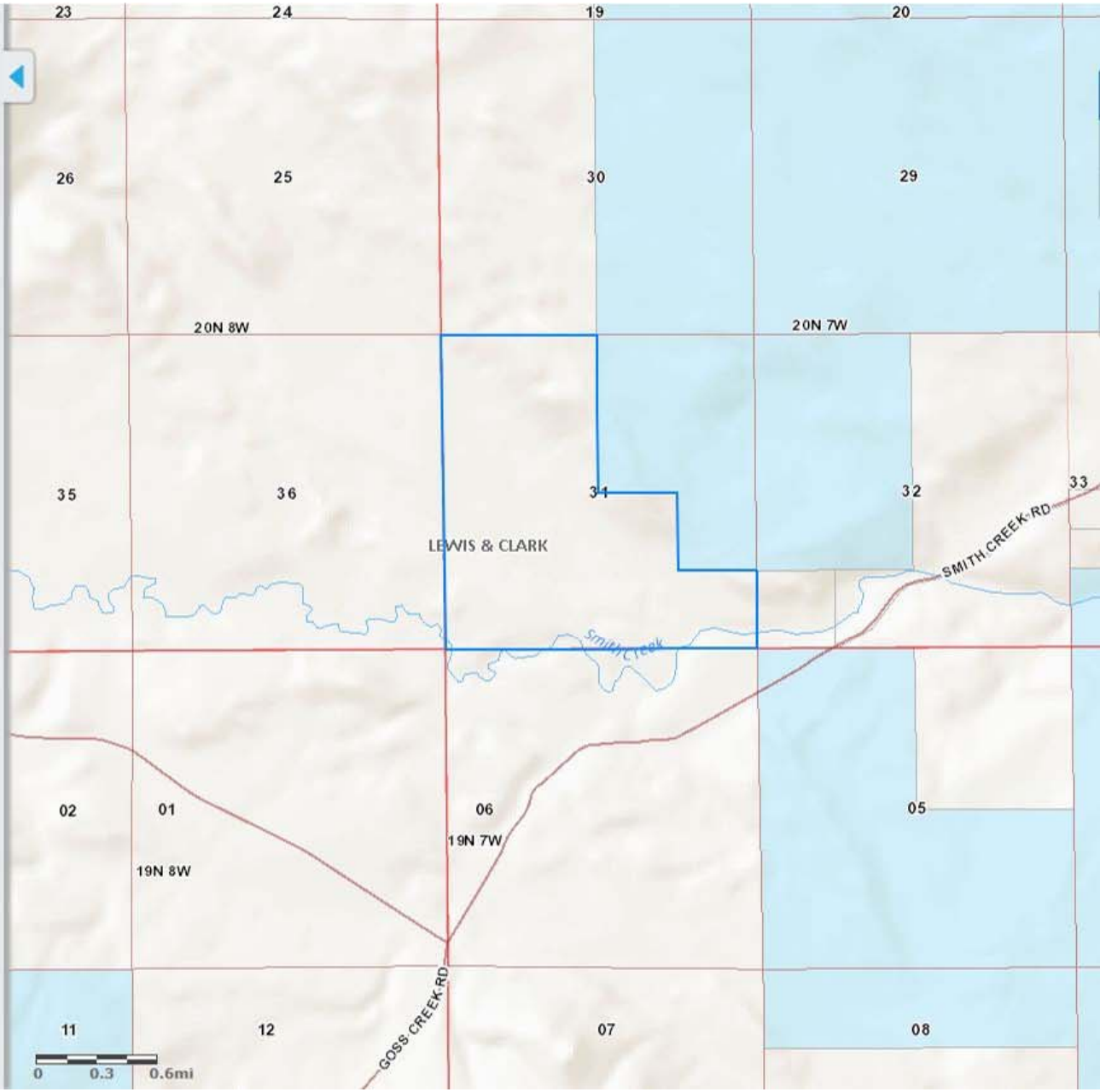
Property Factors

Topography: 8
Fronting: 0 - None
Utilities: 0
Parking Type:
Access: 0
Parking Quantity:
Location: 0 - Rural Land
Parking Proximity:

Land Summary

Land Type	Acres	Value
Grazing	326.769	00.00

Owners
Appraisals
Market Land Info
Dwellings
Other Buildings/Improvements
Commercial
Ag/Forest Land



Property Record Card

Tax Year 2013

Print

Summary

Primary Information

Property Category: RP
Subcategory: Real Property
Geocode: 05-3003-32-3-01-01-0000
Assessment Code: 0000044625
Primary Owner:
HAYSTACK LLC
58 WOODMAN RD
NEW GLOUCESTR, ME 04260-3633
PropertyAddress:
COS Parcel: 2
NOTE: See the Owner tab for all owner information
Certificate of Survey: 3129199
Subdivision:
Legal Description:
S32, T20 N, R07 W, C.O.S. 3129199, PARCEL 2
Last Modified: 4/26/2012 7:43:19 PM

General Property Information

Neighborhood: 771
Property Type: AR - Agricultural Rural
Living Units: 0
Levy District: 05-050201-4501
Zoning:
Ownership %: 100
Linked Property:

Linked Property	Link Type	
05-3003-32-1-01-01-0000	8 - Split	View

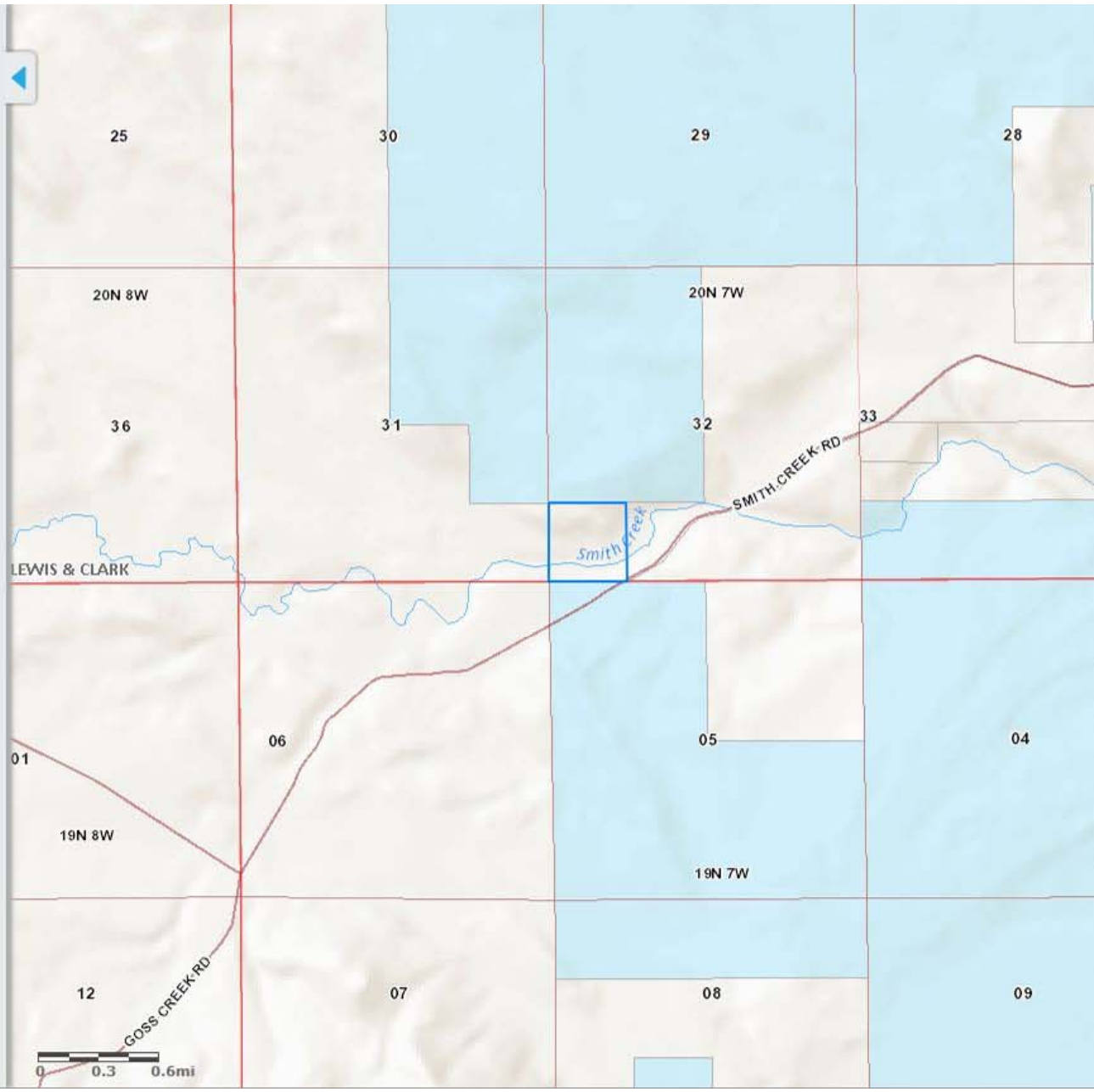
Exemptions:
No exemptions exist for this property
Condo Ownership:
General: 0
Limited: 0

Property Factors

Topography:
Fronting:
Utilities:
Parking Type:
Access:
Parking Quantity:
Location:
Parking Proximity:

Land Summary

Owners
Appraisals
Market Land Info
Dwellings
Other Buildings/Improvements
Commercial
Ag/Forest Land



Property Record Card
Tax Year 2013
Print

Summary

Primary Information

Property Category: RP
Subcategory: Real Property
Geocode: 05-3003-32-4-01-01-0000
Assessment Code: 0000044626
Primary Owner:
HAYSTACK LLC
58 WOODMAN RD
NEW GLOUCESTR, ME 04260-3633
PropertyAddress:
COS Parcel: 3
NOTE: See the Owner tab for all owner information
Certificate of Survey: 3129199
Subdivision:
Legal Description:
S32, T20 N, R07 W, C.O.S. 3129199, PARCEL 3
Last Modified: 4/26/2012 7:43:19 PM

General Property Information

Neighborhood: 771
Property Type: AR - Agricultural Rural
Living Units: 0
Levy District: 05-050201-4501
Zoning:
Ownership %: 100
Linked Property:

Linked Property	Link Type	
05-3003-32-1-01-01-0000	8 - Split	View

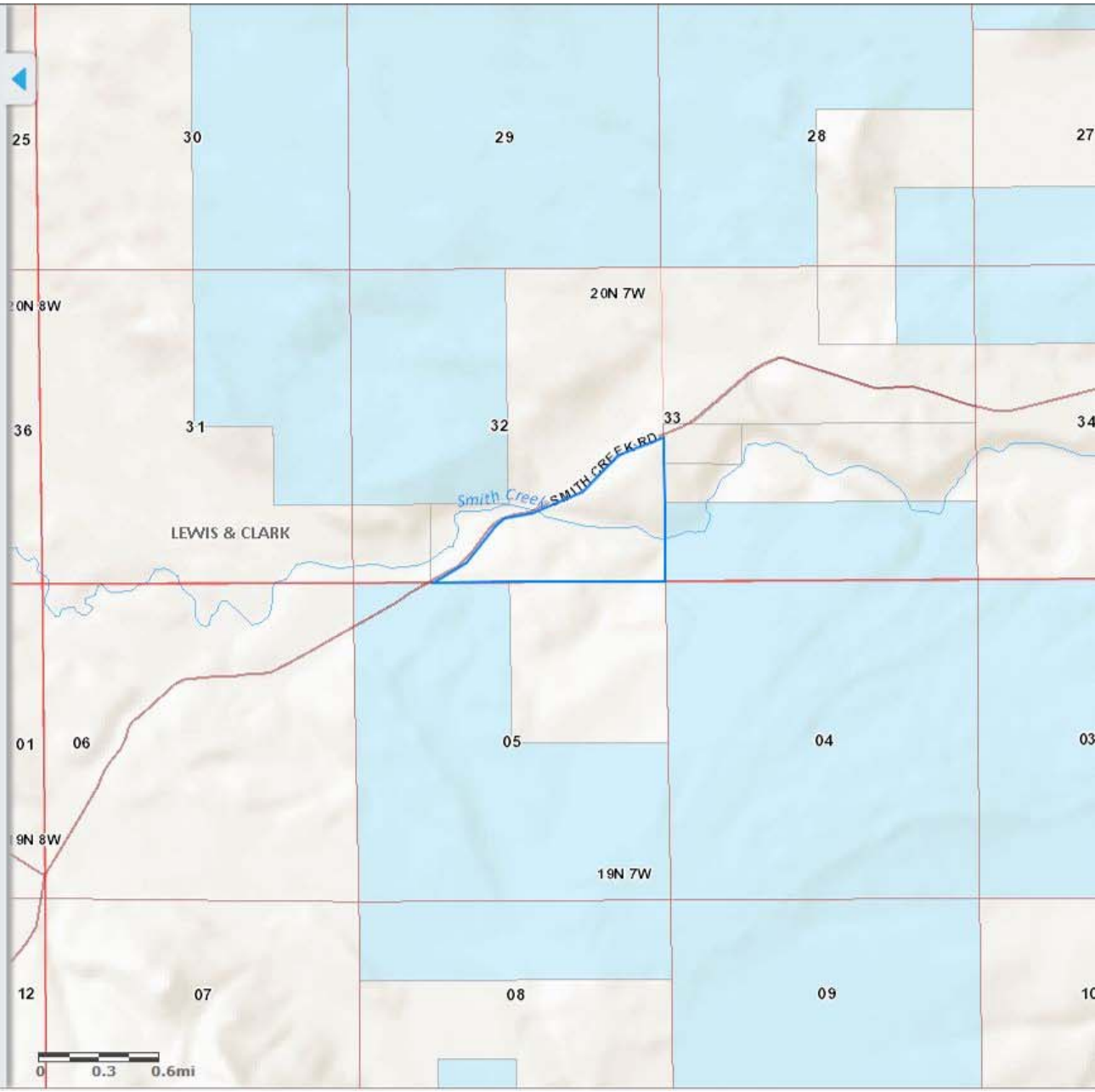
Exemptions:
No exemptions exist for this property
Condo Ownership:
General: 0
Limited: 0

Property Factors

Topography:
Fronting:
Utilities:
Parking Type:
Access:
Parking Quantity:
Location:
Parking Proximity:

Land Summary

Owners
Appraisals
Market Land Info
Dwellings
Other Buildings/Improvements
Commercial
Ag/Forest Land



Property Record Card
Tax Year 2013
Print

Summary

Primary Information

Property Category: RP
Subcategory: Real Property
Geocode: 05-2883-10-2-01-01-0000
Assessment Code: 0000041414
Primary Owner:
HAYSTACK LLC
58 WOODMAN RD
NEW GLOUCESTER, ME 04260
PropertyAddress: 4666 SECONDARY 435 HWY
AUGUSTA, MT 59410
COS Parcel:
NOTE: See the Owner tab for all owner information
Certificate of Survey:
Subdivision:
Legal Description:
S10, T19 N, R07 W, N2, N2S2 LESS 5 AC
Last Modified: 4/26/2012 7:42:07 PM

General Property Information

Neighborhood: 771
Property Type: FR - Farmstead Rural
Living Units: 1
Levy District: 05-050201-4501
Zoning:
Ownership %: 100
Linked Property:
No linked properties exist for this property
Exemptions:
No exemptions exist for this property
Condo Ownership:
General: 0
Limited: 0

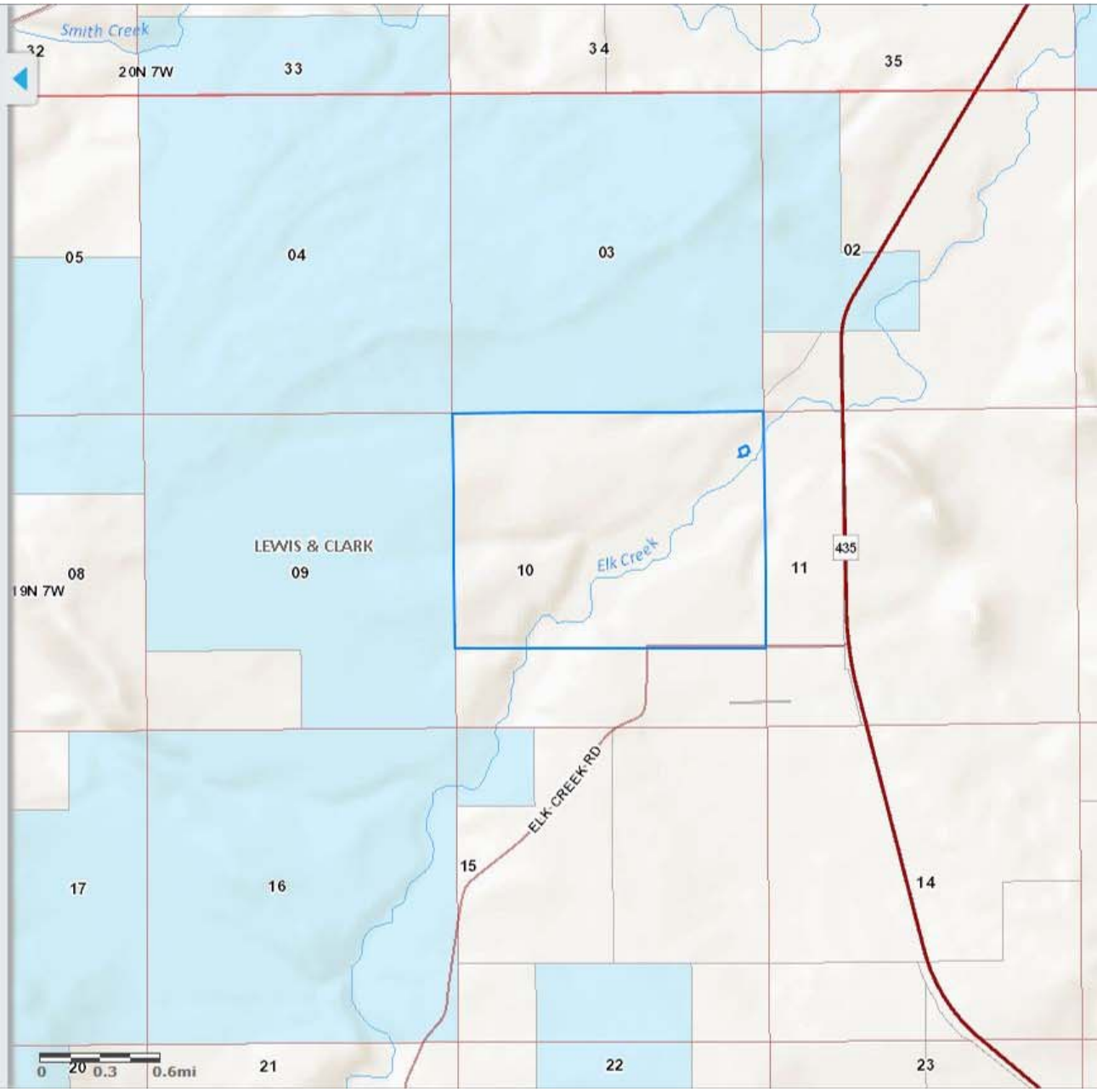
Property Factors

Topography: 8
Fronting: 3 - Secondary Street
Utilities: 7,8
Parking Type: 1 - Off Street
Access: 3
Parking Quantity: 2 - Adequate
Location: 0 - Rural Land
Parking Proximity: 3 - On Site

Land Summary

Land Type	Acres	Value
Grazing	438.793	00.00

Owners
Appraisals
Market Land Info
Dwellings
Other Buildings/Improvements
Commercial
Ag/Forest Land



Property Record Card
Tax Year 2013
Print

Summary

Primary Information

Property Category: RP
Subcategory: Real Property
Geocode: 05-2883-11-2-01-01-AG00
Assessment Code: 0000041415
Primary Owner:
HAYSTACK LLC
58 WOODMAN RD
NEW GLOUCESTER, ME 04260
PropertyAddress:
COS Parcel:
NOTE: See the Owner tab for all owner information
Certificate of Survey:
Subdivision:
Legal Description:
S11, T19 N, R07 W, W2NW, NWSW
Last Modified: 4/26/2012 7:42:07 PM

General Property Information

Neighborhood: 771
Property Type: AR - Agricultural Rural
Living Units: 0
Levy District: 05-050201-4501
Zoning:
Ownership %: 100
Linked Property:
No linked properties exist for this property
Exemptions:
No exemptions exist for this property
Condo Ownership:
General: 0
Limited: 0

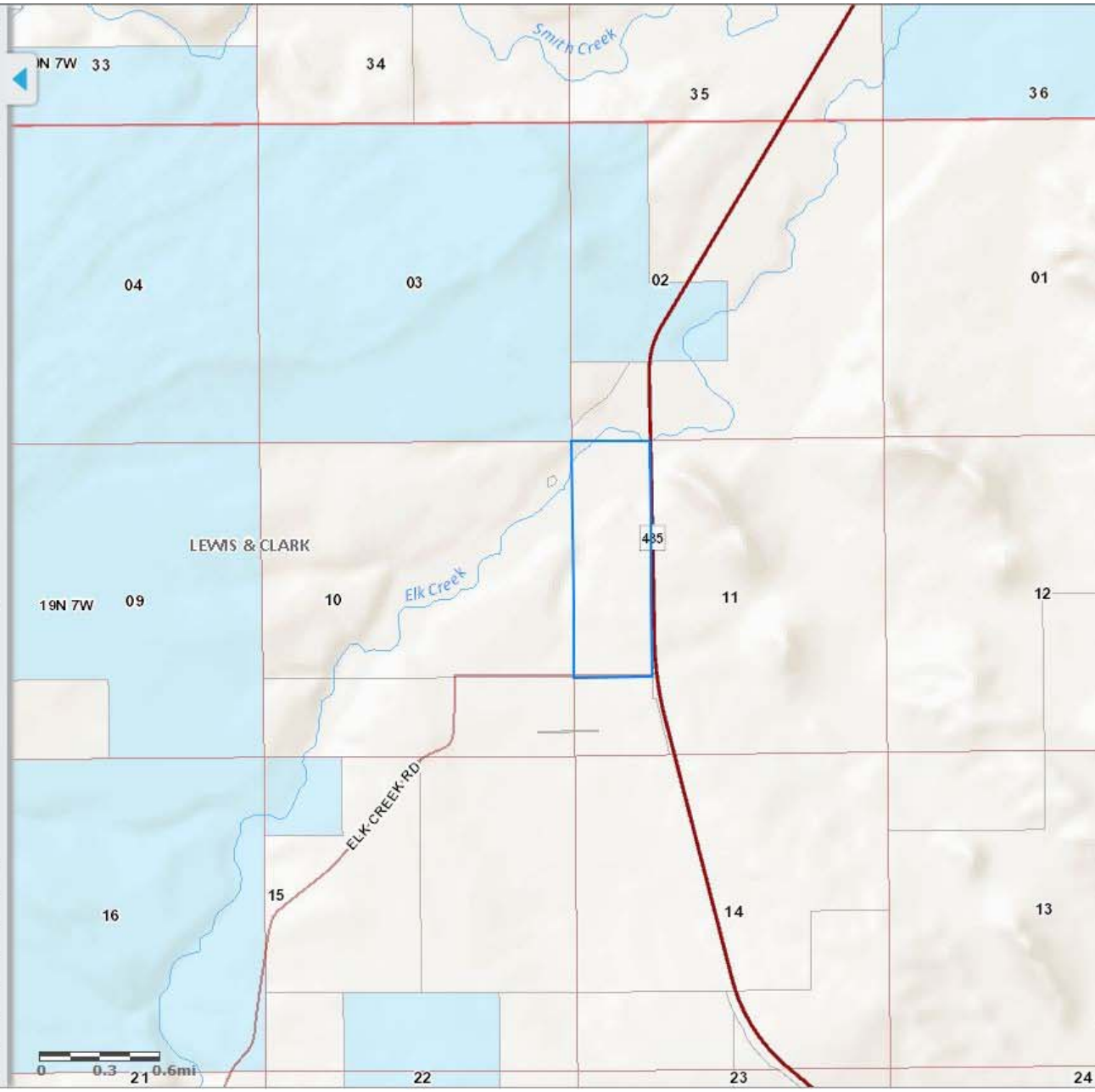
Property Factors

Topography: 8
Fronting: 0 - None
Utilities: 0
Parking Type:
Access: 0
Parking Quantity:
Location: 0 - Rural Land
Parking Proximity:

Land Summary

Land Type	Acres	Value
Grazing	56.565	00.00

Owners
Appraisals
Market Land Info
Dwellings
Other Buildings/Improvements
Commercial
Ag/Forest Land



Property Record Card
Tax Year 2013
Print

Summary

Primary Information

Property Category: RP
Subcategory: Real Property
Geocode: 05-2882-19-1-01-01-AG00
Assessment Code: 0000042208
Primary Owner:
PIERCE BEN & PENELOPE
129 N TWO WATERS WAY
BELGRADE, MT 59714-7704
PropertyAddress:
COS Parcel:
NOTE: See the Owner tab for all owner information
Certificate of Survey:
Subdivision:
Legal Description:
S19, T19 N, R08 W, ALL CORRECTION QCD
Last Modified: 4/26/2012 7:41:43 PM

General Property Information

Neighborhood: 771
Property Type: AR - Agricultural Rural
Living Units: 0
Levy District: 05-050201-4501
Zoning:
Ownership %: 100
Linked Property:
No linked properties exist for this property
Exemptions:
No exemptions exist for this property
Condo Ownership:
General: 0
Limited: 0

Property Factors

Topography: 8
Fronting: 0 - None
Utilities: 0
Parking Type:
Access: 0
Parking Quantity:
Location: 0 - Rural Land
Parking Proximity:

Land Summary

Land Type	Acres	Value
Grazing	81.027	00.00

Owners
Appraisals
Market Land Info
Dwellings
Other Buildings/Improvements
Commercial
Ag/Forest Land

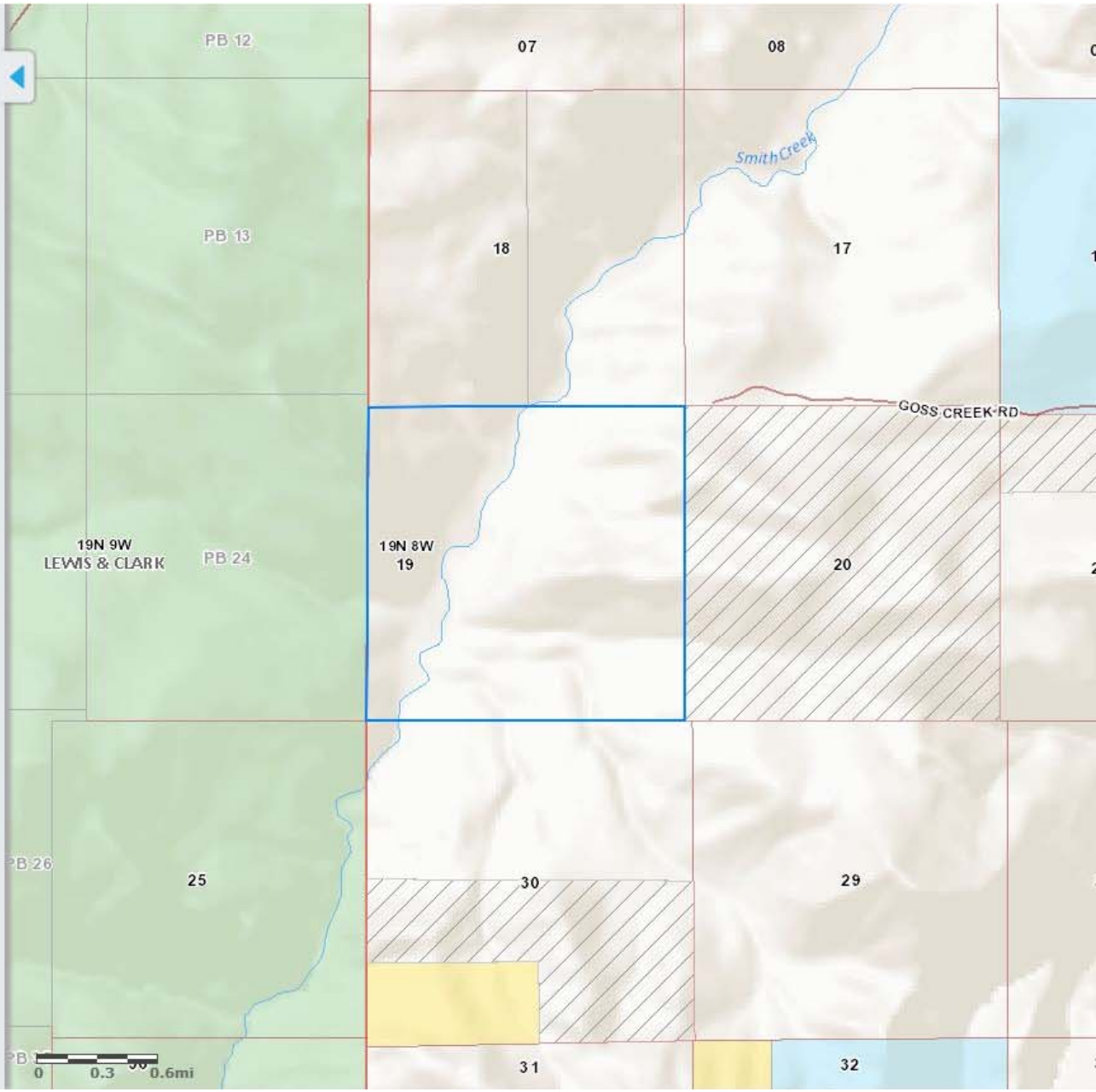


Exhibit 2

Montana Stream Mitigation Procedure Tables

Riparian Mitigation Credits Tables

Table I.5 NET IMPROVEMENT FOR RIPARIAN BUFFERS

Stream Status (Pg 17)	Buffer Width (1side)	91-100% Area* to be restored	61-90% Area* to be restored	33-60% Area* to be Restored	1-32% Area* to be restored	No Restoration Needed**
Primary	4x min width	1.0	0.9	0.8	0.7	0.6
	3x min. width	0.8	0.7	0.6	0.5	0.4
	2x min. width	0.6	0.55	0.5	0.4	0l3
	Minimum Width	0.4	0.3	0.25	0.2	0.15
Secondary	4x min width	0.95	0.85	0.75	0.65	0.55
	3x min. width	0.75	0.65	0.55	0.45	0.35
	2x min. width	0.55	0.45	0.4	0.35	0.25
	Minimum Width	0.3	0.25	0.2	0.15	0.1
Tertiary	4x min width	0.8	0.7	0.6	0.5	0.4
	3x min. width	0.65	0.6	0.5	0.4	0.3
	2x min. width	0.5	0.45	0.4	0.3	0.2
	Minimum Width	0.25	0.2	0.15	0.1	0.05

Table I.6 Riparian Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Riparian Buffer Enhancement **(step 5)** (Calculate value from above Net Improvement table) 0.05 – 1.0				
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.12	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

*Use this option to calculate credits when no restoration of buffer necessary

Factors		Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	Stream Side A	0.6		0	0	0
Net Improvement	Stream Side B		0.6	0	0	0
Type of Protection		0.03	0.03	0	0	0
Mitigation Timing		0.08	0.08	0	0	0
Comparative Stream Order		0.2	0.2	0	0	0
Location		0.1	0.1	0	0	0
Sum of Factors (SF_m)		1.01	1.01	0	0	0
Linear Feet (LF_m)		5848	6148	0	0	0
Reach Multiplier (RM)		0.625	0.625	0	0	0
SF_m x LF_m X RM		3,691.6	3,880.9	0.0	0.0	0.0

Total Riparian Credits = Σ (SF_m x LF_m X RM) = **7,572.5**

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Stream Mitigation Credits Tables

Table I.8 Stream Restoration
Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Minimal 1.2	Moderate 1.8	Substantial 2.5		
Stream Status (Pg 18)	Tertiary 0.05	Secondary 0.2	Primary 0.3		
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.1	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

Factors	Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	1.8	0	0	0	0
Stream Status	0.05	0	0	0	0
Type of Protection	0.03	0	0	0	0
Mitigation Timing	0.1	0	0	0	0
Comparative Stream Order	0.2	0	0	0	0
Location	0.1	0	0	0	0
Sum of Factors (SF_m)	2.28	0	0	0	0
Linear Feet (LF_m)	6148	0	0	0	0
SF_m x LF_m	14,017.4	0.0	0.0	0.0	0.0

Total Stream Credits = Σ (SF_m x LF_m) = **14,017.4**

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Riparian Mitigation Credits Tables

Table I.5 NET IMPROVEMENT FOR RIPARIAN BUFFERS

Stream Status (Pg 17)	Buffer Width (1side)	91-100% Area* to be restored	61-90% Area* to be restored	33-60% Area* to be Restored	1-32% Area* to be restored	No Restoration Needed**
Primary	4x min width	1.0	0.9	0.8	0.7	0.6
	3x min. width	0.8	0.7	0.6	0.5	0.4
	2x min. width	0.6	0.55	0.5	0.4	0l3
	Minimum Width	0.4	0.3	0.25	0.2	0.15
Secondary	4x min width	0.95	0.85	0.75	0.65	0.55
	3x min. width	0.75	0.65	0.55	0.45	0.35
	2x min. width	0.55	0.45	0.4	0.35	0.25
	Minimum Width	0.3	0.25	0.2	0.15	0.1
Tertiary	4x min width	0.8	0.7	0.6	0.5	0.4
	3x min. width	0.65	0.6	0.5	0.4	0.3
	2x min. width	0.5	0.45	0.4	0.3	0.2
	Minimum Width	0.25	0.2	0.15	0.1	0.05

Table I.6 Riparian Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Riparian Buffer Enhancement **(step 5)** (Calculate value from above Net Improvement table) 0.05 – 1.0				
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.12	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

*Use this option to calculate credits when no restoration of buffer necessary

Factors		Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	Stream Side A	0.15	0.45	0.45	0.2	0.2
Net Improvement	Stream Side B	0.15	0.45	0.45	0.2	0.2
Type of Protection		0.03	0.03	0.03	0.03	0.03
Mitigation Timing		0.08	0.08	0.08	0.08	0.08
Comparative Stream Order		0.2	0.2	0.2	0.2	0.2
Location		0.1	0.1	0.1	0.1	0.1
Sum of Factors (SF_m)		0.71	1.31	1.31	0.81	0.81
Linear Feet (LF_m)		4085	3266	1243	2175	1380
Reach Multiplier (RM)		1.25	1.25	1.25	1.25	1.25
SF_m x LF_m X RM		3,625.4	5,348.1	2,035.4	2,202.2	1,397.3

Total Riparian Credits = Σ (SF_m x LF_m X RM) = 14,608.4

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Stream Mitigation Credits Tables

Table I.8 Stream Restoration Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Minimal 1.2	Moderate 1.8	Substantial 2.5		
Stream Status (Pg 18)	Tertiary 0.05	Secondary 0.2	Primary 0.3		
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.1	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

Factors	Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	1.8	2.5	1.8	1.8	2.5
Stream Status	0.05	0.05	0.05	0.05	0.05
Type of Protection	0.03	0.03	0.03	0.03	0.03
Mitigation Timing	0.1	0.08	0.08	0.08	0.08
Comparative Stream Order	0.2	0.2	0.2	0.2	0.2
Location	0.1	0.1	0.1	0.1	0.1
Sum of Factors (SF_m)	2.28	2.96	2.26	2.26	2.96
Linear Feet (LF_m)	4085	3266	1243	2175	1380
SF_m x LF_m	9,313.8	9,667.4	2,809.2	4,915.5	4,084.8

Total Stream Credits = Σ (SF_m x LF_m) = **30,790.6**

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Riparian Mitigation Credits Tables

Table I.5 NET IMPROVEMENT FOR RIPARIAN BUFFERS

Stream Status (Pg 17)	Buffer Width (1side)	91-100% Area* to be restored	61-90% Area* to be restored	33-60% Area* to be Restored	1-32% Area* to be restored	No Restoration Needed**
Primary	4x min width	1.0	0.9	0.8	0.7	0.6
	3x min. width	0.8	0.7	0.6	0.5	0.4
	2x min. width	0.6	0.55	0.5	0.4	0l3
	Minimum Width	0.4	0.3	0.25	0.2	0.15
Secondary	4x min width	0.95	0.85	0.75	0.65	0.55
	3x min. width	0.75	0.65	0.55	0.45	0.35
	2x min. width	0.55	0.45	0.4	0.35	0.25
	Minimum Width	0.3	0.25	0.2	0.15	0.1
Tertiary	4x min width	0.8	0.7	0.6	0.5	0.4
	3x min. width	0.65	0.6	0.5	0.4	0.3
	2x min. width	0.5	0.45	0.4	0.3	0.2
	Minimum Width	0.25	0.2	0.15	0.1	0.05

Table I.6 Riparian Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Riparian Buffer Enhancement **(step 5)** (Calculate value from above Net Improvement table) 0.05 – 1.0				
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.12	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

*Use this option to calculate credits when no restoration of buffer necessary

Factors		Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	Stream Side A	0.25	0	0	0	0
Net Improvement	Stream Side B	0.25	0	0	0	0
Type of Protection		0.03	0	0	0	0
Mitigation Timing		0.08	0	0	0	0
Comparative Stream Order		0.2	0	0	0	0
Location		0.1	0	0	0	0
Sum of Factors (SF_m)		0.91	0	0	0	0
Linear Feet (LF_m)		1700	0	0	0	0
Reach Multiplier (RM)		1.25	0	0	0	0
SF_m x LF_m X RM		1,933.8	0.0	0.0	0.0	0.0

Total Riparian Credits = Σ (SF_m x LF_m X RM) = **1,933.8**

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Stream Mitigation Credits Tables

Table I.8 Stream Restoration Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Minimal 1.2	Moderate 1.8	Substantial 2.5		
Stream Status (Pg 18)	Tertiary 0.05	Secondary 0.2	Primary 0.3		
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.1	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

Factors	Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	2.5	0	0	0	0
Stream Status	0.05	0	0	0	0
Type of Protection	0.03	0	0	0	0
Mitigation Timing	0.1	0	0	0	0
Comparative Stream Order	0.2	0	0	0	0
Location	0.1	0	0	0	0
Sum of Factors (SF_m)	2.98	0	0	0	0
Linear Feet (LF_m)	1700	0	0	0	0
SF_m x LF_m	5,066.0	0.0	0.0	0.0	0.0

Total Stream Credits = Σ (SF_m x LF_m) = 5,066.0

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Riparian Mitigation Credits Tables

Table I.5 NET IMPROVEMENT FOR RIPARIAN BUFFERS

Stream Status (Pg 17)	Buffer Width (1side)	91-100% Area* to be restored	61-90% Area* to be restored	33-60% Area* to be Restored	1-32% Area* to be restored	No Restoration Needed**
Primary	4x min width	1.0	0.9	0.8	0.7	0.6
	3x min. width	0.8	0.7	0.6	0.5	0.4
	2x min. width	0.6	0.55	0.5	0.4	0l3
	Minimum Width	0.4	0.3	0.25	0.2	0.15
Secondary	4x min width	0.95	0.85	0.75	0.65	0.55
	3x min. width	0.75	0.65	0.55	0.45	0.35
	2x min. width	0.55	0.45	0.4	0.35	0.25
	Minimum Width	0.3	0.25	0.2	0.15	0.1
Tertiary	4x min width	0.8	0.7	0.6	0.5	0.4
	3x min. width	0.65	0.6	0.5	0.4	0.3
	2x min. width	0.5	0.45	0.4	0.3	0.2
	Minimum Width	0.25	0.2	0.15	0.1	0.05

Table I.6 Riparian Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Riparian Buffer Enhancement **(step 5)** (Calculate value from above Net Improvement table) 0.05 – 1.0				
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.12	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

*Use this option to calculate credits when no restoration of buffer necessary

Factors		Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	Stream Side A	0.1		0	0	0
Net Improvement	Stream Side B		0.1	0	0	0
Type of Protection		0.03	0.03	0	0	0
Mitigation Timing		0.08	0.08	0	0	0
Comparative Stream Order		0.2	0.2	0	0	0
Location		0.1	0.1	0	0	0
Sum of Factors (SF_m)		0.51	0.51	0	0	0
Linear Feet (LF_m)		6727	7340	0	0	0
Reach Multiplier (RM)		0.625	0.625	0	0	0
SF_m x LF_m X RM		2,144.2	2,339.6	0.0	0.0	0.0

Total Riparian Credits = Σ (SF_m x LF_m X RM) = **4,483.9**

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Stream Mitigation Credits Tables

Table I.8 Stream Restoration Credit Factors Worksheet

FACTORS	MULTIPLIERS				
Net Improvement (Pg 21)	Minimal 1.2	Moderate 1.8	Substantial 2.5		
Stream Status (Pg 18)	Tertiary 0.05	Secondary 0.2	Primary 0.3		
Type of Protection (Pg 22)	Permit Condition 0.03	Covenants 0.05	Deed Restriction 0.1	Conservation Easement 0.15	Fee Title 0.2
Mitigation Timing (Pg 23)	Schedule 5* 0.0	Schedule 4 0.02	Schedule 3 0.05	Schedule 2 0.08	Schedule 1 0.1
Comparative Stream Order (Pg 18)	Same Order 0.2	1 Order Difference 0.01	2 or more Order Difference 0.0		
Location (Pg 23)	On-site 0.2	Off-site 0.1	Outside 0.0		

Factors	Mitigation Reach 1	Mitigation Reach 2	Mitigation Reach 3	Mitigation Reach 4	Mitigation Reach 5
Net Improvement	2.5	0	0	0	0
Stream Status	0.05	0	0	0	0
Type of Protection	0.03	0	0	0	0
Mitigation Timing	0.1	0	0	0	0
Comparative Stream Order	0.2	0	0	0	0
Location	0.1	0	0	0	0
Sum of Factors (SF_m)	2.98	0	0	0	0
Linear Feet (LF_m)	7340	0	0	0	0
SF_m x LF_m	21,873.2	0.0	0.0	0.0	0.0

Total Stream Credits = Σ (SF_m x LF_m) = **21,873.2**

* Buffer 1 side = 0.75 Buffer both sides = 1.25

Exhibit 3

MWAM Summary Tables and Forms – Pre- and Post-Restoration

Duvall Creek Wetlands – Pre- and Post-Restoration Scores

Pre-restoration:

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	L	0.0	1.0	0.00	
14C. Wildlife habitat	L	0.1	1.0	1.22	
14D. Fish habitat	NA				
14E. Flood attenuation	NA				
14F. Surface water storage	L	0.2	1.0	2.44	•
14G. Sediment/nutrient/toxicant	L	0.2	1.0	2.44	•
14H. Shoreline stabilization	NA				
14I. Production export	M	0.5	1.0	6.10	•
14J. Groundwater	M	0.4	1.0	4.88	•
14K. Uniqueness	L	0.1	1.0	1.22	
14L. Recreation/education	NA				
Totals:		**1.50**	**8.0**	**18.30**	
Score:		**19%**			

Post-restoration:

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	M	0.7	1.0	8.54	
14C. Wildlife habitat	H	0.9	1.0	10.98	
14D. Fish habitat	NA				
14E. Flood attenuation	NA				
14F. Surface water storage	M	0.6	1.0	7.32	•
14G. Sediment/nutrient/toxicant	H	0.9	1.0	10.98	•
14H. Shoreline stabilization	NA				
14I. Production export	H	1.0	1.0	12.20	•
14J. Groundwater	M	0.7	1.0	8.54	•
14K. Uniqueness	M	0.6	1.0	7.32	
14L. Recreation/education	M	0.10	NA	1.22	
Totals:		**5.50**	**8.0**	**67.10**	
Score:		**69%**			

MDT Montana Wetland Assessment Form (March 2008)

AA description

1. Project name
LF Ranch Site 1

2. MDT project number

2. Control number

3. Evaluation date
09/11/2012

4. Evaluator(s)
D Patrick

5. Wetlands/Site number(s)
Duval Creek

6i. Legal locations

Location 1
T19N, R7W, 6

6ii. Approximate stationing or mileposts

6iii. Watershed number
10030104

6iii. Watershed name
Missouri-Sun-Smith

6iii. Watershed county
Lewis And Clark

7a. Evaluating agency

7b. Purpose of evaluation

- Mitigation wetlands; pre-construction

8. Wetland size
12.2 acres (measured)

9. AA size
12.2 acres (measured)

10. Classification of wetland and aquatic habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water regime	% of AA
Depressional (D)	Emergent Wetland (EM)	Not applicable	Temporary / Ephemeral (TE)	70
Depressional (D)	Scrub-Shrub Wetland (SS)	Not applicable	Temporary / Ephemeral (TE)	30

11. Estimated relative abundance
Abundant. Estimated > 50% of wetlands in watershed basin similar to AA.

12. General condition of AA

Disturbance

Conditions within AA

High disturbance. AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.

Predominant conditions adjacent to (within 500 feet of) AA

High disturbance. Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.

Rating

H

13. Structural diversity

Existing Number of Cowardin Vegetated Classes in AA

2 (or 1 if forested) classes

Rating

M

14A. Habitat for federally listed or proposed threatened or endangered plants or animals

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14B. Habitat for plants or animals rated S1, S2, or S3 by the Montana Natural Heritage Program

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14C. General wildlife habitat rating

Evidence of overall wildlife use in the AA

Minimal

- Few or no wildlife observations during peak use periods
- Little to no wildlife sign

Class cover distribution (all vegetated classes)

Uneven

Duration of surface water in ≥ 10% of AA

Seasonal / Intermittent (SI)

Rating

0.1 L

14D. General fish habitat rating

Is this section applicable?

No. AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective (such as fish entrapped in a canal).

Rating

NA

14E. Flood attenuation

Is this section applicable?

No. Wetlands not flooded from in-channel or overbank flow.

Rating

NA

14F. Short and long term surface water storage

Is this section applicable?

Yes. Wetlands in the AA flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow.

Amount of water subject to flooding

≤ 1 acre feet

Duration of surface water at wetlands within the AA

Seasonal / Intermittent (SI)

Frequency that wetlands in AA flood or pond

< 5 out of 10 years

Rating

0.2 L

14G. Sediment/nutrient/toxicant retention and removal

Is this section applicable?

Yes. Wetlands in the AA have potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input.

Sediment, nutrient, and toxicant input levels within AA

Major input levels. Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.

Percent cover of wetland vegetation in AA

< 70%

Evidence of flooding/ponding in AA

Yes

AA outlet

Unrestricted outlet

Rating

0.2 L

14H. Sediment/Shoreline stabilization

Is this section applicable?

No. AA does not occur in such a location.

Rating

NA

14I. Production export / food chain support

Acreage of vegetated wetland component in the AA

> 5 acres

AA outlet

Surface or subsurface outlet

Duration of surface water in AA

Seasonal / Intermittent (SI)

Vegetated upland buffer

No

Rating

0.5 M

14J. Groundwater discharge/recharge

Is this section applicable?

Yes. AA has groundwater discharge/recharge potential.

Discharge indicators

- Springs or seeps are known or observed

Duration of saturation at AA wetlands

Temporary / Ephemeral (TE)

Rating

0.4 M

14K. Uniqueness

Rating

0.1 L

14L. Recreation/education potential

Is this section applicable?

No. AA does not currently have or does not have potential for recreation or education opportunities.

Rating

NA

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	L	0.0	1.0	0.00	
14C. Wildlife habitat	L	0.1	1.0	1.22	
14D. Fish habitat	NA				
14E. Flood attenuation	NA				
14F. Surface water storage	L	0.2	1.0	2.44	•
14G. Sediment/nutrient/toxicant	L	0.2	1.0	2.44	•
14H. Shoreline stabilization	NA				
14I. Production export	M	0.5	1.0	6.10	•
14J. Groundwater	M	0.4	1.0	4.88	•
14K. Uniqueness	L	0.1	1.0	1.22	
14L. Recreation/education	NA				
Totals:		**1.50**	**8.0**	**18.30**	
Score:		**19%**			

Category I wetland (must satisfy **one** of the following)

Score of 1 functional point for threatened/endangered species
Score of 1 functional point for uniqueness
Score of 1 functional point for flood attenuation and potential for damage is significant
Score > 80%

Category II wetland (must satisfy **one** of the following)

Score of 1 functional point for S1, S2, S3 species
Score of 0.9 or 1 functional point for wildlife habitat
Score of 0.9 or 1 functional point for fish habitat
Ratings for both fish habitat = E or H
Score of 0.9 functional point for uniqueness
Score > 65%

Category III wetland

- Criteria for other categories **not** satisfied.

Category IV wetland (must satisfy **all** of the following)

- Rating for uniqueness = L

Vegetated wetland component < 1 acre (not including upland vegetated buffer)
Score < 35%

Overall analysis area rating: Category III

MDT Montana Wetland Assessment Form (March 2008)

AA description

1. Project name
LF Ranch Site 1

2. MDT project number

2. Control number

3. Evaluation date
09/11/2012

4. Evaluator(s)
D Patrick

5. Wetlands/Site number(s)
Duval Creek

6i. Legal locations

Location 1
T19N, R7W, 6

6ii. Approximate stationing or mileposts

6iii. Watershed number
10030104

6iii. Watershed name
Missouri-Sun-Smith

6iii. Watershed county
Lewis And Clark

7a. Evaluating agency

7b. Purpose of evaluation

- Mitigation wetlands; post-construction

8. Wetland size
12.2 acres (measured)

9. AA size
12.2 acres (measured)

10. Classification of wetland and aquatic habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water regime	% of AA
Depressional (D)	Emergent Wetland (EM)	Not applicable	Seasonal / Intermittent (SI)	60
Depressional (D)	Scrub-Shrub Wetland (SS)	Not applicable	Seasonal / Intermittent (SI)	40

11. Estimated relative abundance
Common. Estimated 10-50% of wetlands in watershed basin similar to AA.

12. General condition of AA

Disturbance

Conditions within AA

Low disturbance. AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤ 15%.

Predominant conditions adjacent to (within 500 feet of) AA

Low disturbance. Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤ 15%.

Rating

L

13. Structural diversity

Existing Number of Cowardin Vegetated Classes in AA

2 (or 1 if forested) classes

Rating

M

14A. Habitat for federally listed or proposed threatened or endangered plants or animals

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14B. Habitat for plants or animals rated S1, S2, or S3 by the Montana Natural Heritage Program

Is this section applicable?

Yes. AA is documented or suspected to contain species rated S1, S2, or S3 by the Montana Natural Heritage Program (not including species listed in 14A).

Species 1

Name of species

Western Toad, Blue Heron, Idaho Sedge, Beaked Spikerush

Species type

S1 species

Habitat type

Secondary habitat

Documented/Suspected

Documented

Rating

0.7 M

14C. General wildlife habitat rating

Evidence of overall wildlife use in the AA

Substantial

- Observations of abundant wildlife numbers or high species diversity (during any period)
- Abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.

Class cover distribution (all vegetated classes)

Even

Duration of surface water in ≥ 10% of AA

Seasonal / Intermittent (SI)

Rating

0.9 H

14D. General fish habitat rating

Is this section applicable?

No. AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective (such as fish entrapped in a canal).

Rating

NA

14E. Flood attenuation

Is this section applicable?

No. Wetlands not flooded from in-channel or overbank flow.

Rating

NA

14F. Short and long term surface water storage

Is this section applicable?

Yes. Wetlands in the AA flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow.

Amount of water subject to flooding

1.1 to 5 acre feet

Duration of surface water at wetlands within the AA

Seasonal / Intermittent (SI)

Frequency that wetlands in AA flood or pond

≥ 5 out of 10 years

Rating

0.6 M

14G. Sediment/nutrient/toxicant retention and removal

Is this section applicable?

Yes. Wetlands in the AA have potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input.

Sediment, nutrient, and toxicant input levels within AA

Minor input levels. AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.

Percent cover of wetland vegetation in AA

≥ 70%

Evidence of flooding/ponding in AA

Yes

AA outlet

Unrestricted outlet

Rating

0.9 H

14H. Sediment/Shoreline stabilization

Is this section applicable?

No. AA does not occur in such a location.

Rating

NA

14I. Production export / food chain support

Acreage of vegetated wetland component in the AA

> 5 acres

AA outlet

Surface or subsurface outlet

Duration of surface water in AA

Seasonal / Intermittent (SI)

Vegetated upland buffer

Yes. There is an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference.

Rating

1.0 H

14J. Groundwater discharge/recharge

Is this section applicable?

Yes. AA has groundwater discharge/recharge potential.

Discharge indicators

- Springs or seeps are known or observed

Duration of saturation at AA wetlands

Seasonal / Intermittent (SI)

Rating

0.7 M

14K. Uniqueness

AA contains

- Plant association listed as "S2" by the MTNHP

Rating

0.6 M

14L. Recreation/education potential

Is this section applicable?

Yes. AA provides or could provide recreation or education opportunities.

AA is a

Known education/recreation site

AA does or could support

- Consumptive recreation
- Non-consumptive recreation

Access to recreation/education area is

Private or public ownership without general public access, or requiring permission for public access

Rating

0.10 M

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	M	0.7	1.0	8.54	
14C. Wildlife habitat	H	0.9	1.0	10.98	
14D. Fish habitat	NA				
14E. Flood attenuation	NA				
14F. Surface water storage	M	0.6	1.0	7.32	•
14G. Sediment/nutrient/toxicant	H	0.9	1.0	10.98	•
14H. Shoreline stabilization	NA				
14I. Production export	H	1.0	1.0	12.20	•
14J. Groundwater	M	0.7	1.0	8.54	•
14K. Uniqueness	M	0.6	1.0	7.32	
14L. Recreation/education	M	0.10	NA	1.22	
Totals:		**5.50**	**8.0**	**67.10**	
Score:		**69%**			

Category I wetland (must satisfy **one** of the following)

Score of 1 functional point for threatened/endangered species
Score of 1 functional point for uniqueness
Score of 1 functional point for flood attenuation and potential for damage is significant
Score > 80%

Category II wetland (must satisfy **one** of the following)

Score of 1 functional point for S1, S2, S3 species
- Score of 0.9 or 1 functional point for wildlife habitat

Score of 0.9 or 1 functional point for fish habitat
Ratings for both fish habitat = E or H
Score of 0.9 functional point for uniqueness
- Score > 65%

Category III wetland

Criteria for other categories **not** satisfied.

Category IV wetland (must satisfy **all** of the following)

Rating for uniqueness = L
Vegetated wetland component < 1 acre (not including upland vegetated buffer)
Score < 35%

Overall analysis area rating: Category II

Elk Creek Riparian Wetlands – Pre- and Post-Restoration Scores

Pre-restoration:

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	L	0.0	1.0	0.00	
14C. Wildlife habitat	M	0.5	1.0	38.20	•
14D. Fish habitat	NA				
14E. Flood attenuation	H	0.9	1.0	68.76	•
14F. Surface water storage	H	0.9	1.0	68.76	•
14G. Sediment/nutrient/toxicant	L	0.3	1.0	22.92	
14H. Shoreline stabilization	NA				
14I. Production export	M	0.7	1.0	53.48	•
14J. Groundwater	NA				
14K. Uniqueness	M	0.4	1.0	30.56	
14L. Recreation/education	NA				
Totals:		**3.70**	**8.0**	**282.68**	
Score:		**46%**			

Post-restoration:

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	H	1.0	1.0	76.40	
14C. Wildlife habitat	E	1.0	1.0	76.40	•
14D. Fish habitat	NA				
14E. Flood attenuation	H	0.9	1.0	68.76	•
14F. Surface water storage	H	0.9	1.0	68.76	•
14G. Sediment/nutrient/toxicant	H	1.0	1.0	76.40	
14H. Shoreline stabilization	NA				
14I. Production export	H	1.0	1.0	76.40	•
14J. Groundwater	NA				
14K. Uniqueness	M	0.6	1.0	45.84	
14L. Recreation/education	M	0.10	NA	7.64	
Totals:		**6.50**	**8.0**	**496.60**	
Score:		**81%**			

MDT Montana Wetland Assessment Form (March 2008)

AA description

1. Project name
LF Ranch Site 2

2. MDT project number

2. Control number

3. Evaluation date
09/11/2012

4. Evaluator(s)
D Patrick

5. Wetlands/Site number(s)
Elk Creek - riparian

6i. Legal locations

Location 1
T19N, R7W, 10

6ii. Approximate stationing or mileposts

6iii. Watershed number
10030104

6iii. Watershed name
Missouri-Sun-Smith

6iii. Watershed county
Lewis And Clark

7a. Evaluating agency

7b. Purpose of evaluation

- Mitigation wetlands; pre-construction

8. Wetland size
76.4 acres (measured)

9. AA size
76.4 acres (measured)

10. Classification of wetland and aquatic habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water regime	% of AA
Riverine (R)	Emergent Wetland (EM)	Not applicable	Seasonal / Intermittent (SI)	20
Riverine (R)	Scrub-Shrub Wetland (SS)	Not applicable	Seasonal / Intermittent (SI)	50
Riverine (R)	Forested Wetland (FO)	Not applicable	Seasonal / Intermittent (SI)	30

11. Estimated relative abundance
Common. Estimated 10-50% of wetlands in watershed basin similar to AA.

12. General condition of AA

Disturbance

Conditions within AA

High disturbance. AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.

Predominant conditions adjacent to (within 500 feet of) AA

High disturbance. Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.

Rating

H

13. Structural diversity

Existing Number of Cowardin Vegetated Classes in AA

≥ 3 (or 2 if forested) classes

Rating

H

14A. Habitat for federally listed or proposed threatened or endangered plants or animals

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14B. Habitat for plants or animals rated S1, S2, or S3 by the Montana Natural Heritage Program

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14C. General wildlife habitat rating

Evidence of overall wildlife use in the AA

Moderate

- Observations of scattered wildlife groups or individuals or relatively few species during peak periods
- Common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.

Class cover distribution (all vegetated classes)

Uneven

Duration of surface water in ≥ 10% of AA

Seasonal / Intermittent (SI)

Rating

0.5 M

14D. General fish habitat rating

Is this section applicable?

No. AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective (such as fish entrapped in a canal).

Rating

NA

14E. Flood attenuation

Is this section applicable?

Yes. Wetlands subject to flooding via in-channel or overbank flow.

Flood-prone width

900 feet

Bankfull width

30 feet

Entrenchment ratio (ER)

30.000

Percentage of flooded wetland classified as forested and/or scrub/shrub

25%-75%

Outlet

No outlet or restricted outlet

Potential for damage

≥ 10 acres of wetland in the AA are subject to flooding **and** man-made features which may be significantly damaged by floods are located within 0.5 mile downstream of the AA.

Rating

0.9 H

14F. Short and long term surface water storage

Is this section applicable?

Yes. Wetlands in the AA flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow.

Amount of water subject to flooding

> 5 acre feet

Duration of surface water at wetlands within the AA

Seasonal / Intermittent (SI)

Frequency that wetlands in AA flood or pond

≥ 5 out of 10 years

Rating

0.9 H

14G. Sediment/nutrient/toxicant retention and removal

Is this section applicable?

Yes. Wetlands in the AA have potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input.

Sediment, nutrient, and toxicant input levels within AA

Major input levels. Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.

Percent cover of wetland vegetation in AA

< 70%

Evidence of flooding/ponding in AA

Yes

AA outlet

No outlet or restricted outlet

Rating

0.3 L

Comments

Wetland vegetation dominates but is less than 70% of cover

14H. Sediment/Shoreline stabilization

Is this section applicable?

No. AA does not occur in such a location.

Rating

NA

14I. Production export / food chain support

Acreage of vegetated wetland component in the AA

> 5 acres

AA outlet

Surface or subsurface outlet

Duration of surface water in AA

Seasonal / Intermittent (SI)

Vegetated upland buffer

No

Rating

0.7 M

14J. Groundwater discharge/recharge

Is this section applicable?

No. Groundwater discharge/recharge potential cannot be reasonably ascertained in the AA at this level of analysis. Explain in comments section.

Rating

NA

14K. Uniqueness

Rating

0.4 M

14L. Recreation/education potential

Is this section applicable?

No. AA does not currently have or does not have potential for recreation or education opportunities.

Rating

NA

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	L	0.0	1.0	0.00	
14C. Wildlife habitat	M	0.5	1.0	38.20	•
14D. Fish habitat	NA				
14E. Flood attenuation	H	0.9	1.0	68.76	•
14F. Surface water storage	H	0.9	1.0	68.76	•
14G. Sediment/nutrient/toxicant	L	0.3	1.0	22.92	
14H. Shoreline stabilization	NA				
14I. Production export	M	0.7	1.0	53.48	•
14J. Groundwater	NA				
14K. Uniqueness	M	0.4	1.0	30.56	
14L. Recreation/education	NA				
Totals:		**3.70**	**8.0**	**282.68**	
Score:		**46%**			

Category I wetland (must satisfy **one** of the following)

Score of 1 functional point for threatened/endangered species
Score of 1 functional point for uniqueness
Score of 1 functional point for flood attenuation and potential for damage is significant
Score > 80%

Category II wetland (must satisfy **one** of the following)

Score of 1 functional point for S1, S2, S3 species
Score of 0.9 or 1 functional point for wildlife habitat
Score of 0.9 or 1 functional point for fish habitat
Ratings for both fish habitat = E or H
Score of 0.9 functional point for uniqueness
Score > 65%

Category III wetland

- Criteria for other categories **not** satisfied.

Category IV wetland (must satisfy **all** of the following)

Rating for uniqueness = L
Vegetated wetland component < 1 acre (not including upland vegetated buffer)
Score < 35%

Overall analysis area rating: Category III

MDT Montana Wetland Assessment Form (March 2008)

AA description

1. Project name
LF Ranch Site 2

2. MDT project number

2. Control number

3. Evaluation date
09/11/2012

4. Evaluator(s)
D Patrick

5. Wetlands/Site number(s)
Elk Creek - riparian

6i. Legal locations

Location 1
T19N, R7W, 10

6ii. Approximate stationing or mileposts

6iii. Watershed number
10030104

6iii. Watershed name
Missouri-Sun-Smith

6iii. Watershed county
Lewis And Clark

7a. Evaluating agency

7b. Purpose of evaluation

- Mitigation wetlands; post-construction

8. Wetland size
76.4 acres (measured)

9. AA size
76.4 acres (measured)

10. Classification of wetland and aquatic habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water regime	% of AA
Riverine (R)	Emergent Wetland (EM)	Not applicable	Seasonal / Intermittent (SI)	20
Riverine (R)	Scrub-Shrub Wetland (SS)	Not applicable	Seasonal / Intermittent (SI)	50
Riverine (R)	Forested Wetland (FO)	Not applicable	Seasonal / Intermittent (SI)	30

11. Estimated relative abundance
Common. Estimated 10-50% of wetlands in watershed basin similar to AA.

12. General condition of AA

Disturbance

Conditions within AA

Low disturbance. AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤ 15%.

Predominant conditions adjacent to (within 500 feet of) AA

Low disturbance. Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤ 15%.

Rating

L

13. Structural diversity

Existing Number of Cowardin Vegetated Classes in AA

≥ 3 (or 2 if forested) classes

Rating

H

14A. Habitat for federally listed or proposed threatened or endangered plants or animals

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14B. Habitat for plants or animals rated S1, S2, or S3 by the Montana Natural Heritage Program

Is this section applicable?

Yes. AA is documented or suspected to contain species rated S1, S2, or S3 by the Montana Natural Heritage Program (not including species listed in 14A).

Species 1

Name of species

Western Toad, Blue Heron, Idaho Sedge, Beaked Spikerush

Species type

S1 species

Habitat type

Primary

Documented/Suspected

Documented

Rating

1.0 H

14C. General wildlife habitat rating

Evidence of overall wildlife use in the AA

Substantial

- Observations of abundant wildlife numbers or high species diversity (during any period)
- Abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.

Class cover distribution (all vegetated classes)

Uneven

Duration of surface water in ≥ 10% of AA

Seasonal / Intermittent (SI)

Rating

1.0 E

14D. General fish habitat rating

Is this section applicable?

No. AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective (such as fish entrapped in a canal).

Rating

NA

14E. Flood attenuation

Is this section applicable?

Yes. Wetlands subject to flooding via in-channel or overbank flow.

Flood-prone width

900 feet

Bankfull width

30 feet

Entrenchment ratio (ER)

30.000

Percentage of flooded wetland classified as forested and/or scrub/shrub

25%-75%

Outlet

No outlet or restricted outlet

Potential for damage

≥ 10 acres of wetland in the AA are subject to flooding **and** man-made features which may be significantly damaged by floods are located within 0.5 mile downstream of the AA.

Rating

0.9 H

14F. Short and long term surface water storage

Is this section applicable?

Yes. Wetlands in the AA flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow.

Amount of water subject to flooding

> 5 acre feet

Duration of surface water at wetlands within the AA

Seasonal / Intermittent (SI)

Frequency that wetlands in AA flood or pond

≥ 5 out of 10 years

Rating

0.9 H

14G. Sediment/nutrient/toxicant retention and removal

Is this section applicable?

Yes. Wetlands in the AA have potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input.

Sediment, nutrient, and toxicant input levels within AA

Minor input levels. AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.

Percent cover of wetland vegetation in AA

≥ 70%

Evidence of flooding/ponding in AA

Yes

AA outlet

No outlet or restricted outlet

Rating

1.0 H

Comments

Wetland vegetation dominates and is over 70% of cover

14H. Sediment/Shoreline stabilization

Is this section applicable?

No. AA does not occur in such a location.

Rating

NA

14I. Production export / food chain support

Acreage of vegetated wetland component in the AA

> 5 acres

AA outlet

Surface or subsurface outlet

Duration of surface water in AA

Seasonal / Intermittent (SI)

Vegetated upland buffer

Yes. There is an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference.

Rating

1.0 H

14J. Groundwater discharge/recharge

Is this section applicable?

No. Groundwater discharge/recharge potential cannot be reasonably ascertained in the AA at this level of analysis. Explain in comments section.

Rating

NA

14K. Uniqueness

AA contains

- Plant association listed as "S2" by the MTNHP

Rating

0.6 M

14L. Recreation/education potential

Is this section applicable?

Yes. AA provides or could provide recreation or education opportunities.

AA is a

Known education/recreation site

AA does or could support

- Consumptive recreation
- Non-consumptive recreation

Access to recreation/education area is

Private or public ownership without general public access, or requiring permission for public access

Rating

0.10 M

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	H	1.0	1.0	76.40	
14C. Wildlife habitat	E	1.0	1.0	76.40	•
14D. Fish habitat	NA				
14E. Flood attenuation	H	0.9	1.0	68.76	•
14F. Surface water storage	H	0.9	1.0	68.76	•
14G. Sediment/nutrient/toxicant	H	1.0	1.0	76.40	
14H. Shoreline stabilization	NA				
14I. Production export	H	1.0	1.0	76.40	•
14J. Groundwater	NA				
14K. Uniqueness	M	0.6	1.0	45.84	
14L. Recreation/education	M	0.10	NA	7.64	
Totals:		**6.50**	**8.0**	**496.60**	
Score:		**81%**			

Category I wetland (must satisfy **one** of the following)

Score of 1 functional point for threatened/endangered species
Score of 1 functional point for uniqueness
Score of 1 functional point for flood attenuation and potential for damage is significant

- Score > 80%

Category II wetland (must satisfy **one** of the following)

- Score of 1 functional point for S1, S2, S3 species
- Score of 0.9 or 1 functional point for wildlife habitat

Score of 0.9 or 1 functional point for fish habitat
Ratings for both fish habitat = E or H
Score of 0.9 functional point for uniqueness

- Score > 65%

Category III wetland

Criteria for other categories **not** satisfied.

Category IV wetland (must satisfy **all** of the following)

Rating for uniqueness = L
Vegetated wetland component < 1 acre (not including upland vegetated buffer)
Score < 35%

Overall analysis area rating: Category I

Elk Creek Meadow/Mosaic Wetlands – Pre- and Post-Restoration Scores

Pre-restoration:

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	L	0.0	1.0	0.00	
14C. Wildlife habitat	L	0.1	1.0	0.44	
14D. Fish habitat	NA				
14E. Flood attenuation	L	0.1	1.0	0.44	•
14F. Surface water storage	L	0.1	1.0	0.44	•
14G. Sediment/nutrient/toxicant	L	0.1	1.0	0.44	•
14H. Shoreline stabilization	NA				
14I. Production export	L	0.3	1.0	1.32	•
14J. Groundwater	NA				
14K. Uniqueness	L	0.1	1.0	0.44	
14L. Recreation/education	NA				
Totals:		**0.80**	**8.0**	**3.52**	
Score:		**10%**			

Post-restoration:

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	H	1.0	1.0	4.40	
14C. Wildlife habitat	H	0.9	1.0	3.96	
14D. Fish habitat	NA				
14E. Flood attenuation	H	0.8	1.0	3.52	•
14F. Surface water storage	M	0.6	1.0	2.64	•
14G. Sediment/nutrient/toxicant	H	0.9	1.0	3.96	•
14H. Shoreline stabilization	NA				
14I. Production export	H	0.9	1.0	3.96	•
14J. Groundwater	NA				
14K. Uniqueness	M	0.6	1.0	2.64	
14L. Recreation/education	M	0.10	NA	0.44	
Totals:		**5.80**	**8.0**	**25.52**	
Score:		**73%**			

MDT Montana Wetland Assessment Form (March 2008)

AA description

1. Project name
LF Ranch Site 3

2. MDT project number

2. Control number

3. Evaluation date
09/11/2012

4. Evaluator(s)
D Patrick

5. Wetlands/Site number(s)
Elk Creek - meadow

6i. Legal locations

Location 1
T19N, R7W, 10

6ii. Approximate stationing or mileposts

6iii. Watershed number
10030104

6iii. Watershed name
Missouri-Sun-Smith

6iii. Watershed county
Lewis And Clark

7a. Evaluating agency

7b. Purpose of evaluation

- Mitigation wetlands; pre-construction

8. Wetland size
4.4 acres (measured)

9. AA size
4.4 acres (measured)

10. Classification of wetland and aquatic habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water regime	% of AA
Depressional (D)	Emergent Wetland (EM)	Not applicable	Temporary / Ephemeral (TE)	100

11. Estimated relative abundance
Abundant. Estimated > 50% of wetlands in watershed basin similar to AA.

12. General condition of AA

Disturbance

Conditions within AA

High disturbance. AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.

Predominant conditions adjacent to (within 500 feet of) AA

High disturbance. Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.

Rating

H

13. Structural diversity

Existing Number of Cowardin Vegetated Classes in AA

1 class, but not a monoculture

Is current management preventing (passive) existence of additional vegetated classes?

No

Rating

M

14A. Habitat for federally listed or proposed threatened or endangered plants or animals

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14B. Habitat for plants or animals rated S1, S2, or S3 by the Montana Natural Heritage Program

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14C. General wildlife habitat rating

Evidence of overall wildlife use in the AA

Minimal

- Few or no wildlife observations during peak use periods
- Little to no wildlife sign

Class cover distribution (all vegetated classes)

Even

Duration of surface water in ≥ 10% of AA

Temporary / Ephemeral (TE)

Rating

0.1 L

14D. General fish habitat rating

Is this section applicable?

No. AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective (such as fish entrapped in a canal).

Rating

NA

14E. Flood attenuation

Is this section applicable?

Yes. Wetlands subject to flooding via in-channel or overbank flow.

Flood-prone width

30 feet

Bankfull width

30 feet

Entrenchment ratio (ER)

1.000

Percentage of flooded wetland classified as forested and/or scrub/shrub

< 25%

Outlet

Unrestricted outlet

Rating

0.1 L

14F. Short and long term surface water storage

Is this section applicable?

Yes. Wetlands in the AA flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow.

Amount of water subject to flooding

≤ 1 acre feet

Duration of surface water at wetlands within the AA

Temporary / Ephemeral (TE)

Frequency that wetlands in AA flood or pond

< 5 out of 10 years

Rating

0.1 L

14G. Sediment/nutrient/toxicant retention and removal

Is this section applicable?

Yes. Wetlands in the AA have potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input.

Sediment, nutrient, and toxicant input levels within AA

Major input levels. Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.

Percent cover of wetland vegetation in AA

< 70%

Evidence of flooding/ponding in AA

No

AA outlet

Unrestricted outlet

Rating

0.1 L

14H. Sediment/Shoreline stabilization

Is this section applicable?

No. AA does not occur in such a location.

Rating

NA

14I. Production export / food chain support

Acreage of vegetated wetland component in the AA

1-5 acres

AA outlet

Surface or subsurface outlet

Duration of surface water in AA

Temporary / Ephemeral (TE)

Vegetated upland buffer

No

Rating

0.3 L

14J. Groundwater discharge/recharge

Is this section applicable?

No. Groundwater discharge/recharge potential cannot be reasonably ascertained in the AA at this level of analysis. Explain in comments section.

Rating

NA

14K. Uniqueness

Rating

0.1 L

14L. Recreation/education potential

Is this section applicable?

No. AA does not currently have or does not have potential for recreation or education opportunities.

Rating

NA

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	L	0.0	1.0	0.00	
14C. Wildlife habitat	L	0.1	1.0	0.44	
14D. Fish habitat	NA				
14E. Flood attenuation	L	0.1	1.0	0.44	•
14F. Surface water storage	L	0.1	1.0	0.44	•
14G. Sediment/nutrient/toxicant	L	0.1	1.0	0.44	•
14H. Shoreline stabilization	NA				
14I. Production export	L	0.3	1.0	1.32	•
14J. Groundwater	NA				
14K. Uniqueness	L	0.1	1.0	0.44	
14L. Recreation/education	NA				
Totals:		**0.80**	**8.0**	**3.52**	
Score:		**10%**			

Category I wetland (must satisfy **one** of the following)

Score of 1 functional point for threatened/endangered species
Score of 1 functional point for uniqueness
Score of 1 functional point for flood attenuation and potential for damage is significant
Score > 80%

Category II wetland (must satisfy **one** of the following)

Score of 1 functional point for S1, S2, S3 species
Score of 0.9 or 1 functional point for wildlife habitat
Score of 0.9 or 1 functional point for fish habitat
Ratings for both fish habitat = E or H
Score of 0.9 functional point for uniqueness
Score > 65%

Category III wetland

- Criteria for other categories **not** satisfied.

Category IV wetland (must satisfy **all** of the following)

- Rating for uniqueness = L

Vegetated wetland component < 1 acre (not including upland vegetated buffer)
Score < 35%

Overall analysis area rating: Category III

MDT Montana Wetland Assessment Form (March 2008)

AA description

1. Project name
LF Ranch Site 3

2. MDT project number

2. Control number

3. Evaluation date
09/11/2012

4. Evaluator(s)
D Patrick

5. Wetlands/Site number(s)
Elk Creek - meadow

6i. Legal locations

Location 1
T19N, R7W, 10

6ii. Approximate stationing or mileposts

6iii. Watershed number
10030104

6iii. Watershed name
Missouri-Sun-Smith

6iii. Watershed county
Lewis And Clark

7a. Evaluating agency

7b. Purpose of evaluation

- Mitigation wetlands; post-construction

8. Wetland size
4.4 acres (measured)

9. AA size
4.4 acres (measured)

10. Classification of wetland and aquatic habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water regime	% of AA
Depressional (D)	Emergent Wetland (EM)	Not applicable	Seasonal / Intermittent (SI)	70
Depressional (D)	Scrub-Shrub Wetland (SS)	Not applicable	Seasonal / Intermittent (SI)	30

11. Estimated relative abundance
Common. Estimated 10-50% of wetlands in watershed basin similar to AA.

12. General condition of AA

Disturbance

Conditions within AA

Low disturbance. AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤ 15%.

Predominant conditions adjacent to (within 500 feet of) AA

Low disturbance. Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is ≤ 15%.

Rating

L

13. Structural diversity

Existing Number of Cowardin Vegetated Classes in AA

2 (or 1 if forested) classes

Rating

M

14A. Habitat for federally listed or proposed threatened or endangered plants or animals

Is this section applicable?

No. No usable habitat suspected.

Rating

0.0 L

14B. Habitat for plants or animals rated S1, S2, or S3 by the Montana Natural Heritage Program

Is this section applicable?

Yes. AA is documented or suspected to contain species rated S1, S2, or S3 by the Montana Natural Heritage Program (not including species listed in 14A).

Species 1

Name of species

Western Toad, Blue Heron, Idaho Sedge, Beaked Spikerush

Species type

S1 species

Habitat type

Primary

Documented/Suspected

Documented

Rating

1.0 H

14C. General wildlife habitat rating

Evidence of overall wildlife use in the AA

Substantial

- Observations of abundant wildlife numbers or high species diversity (during any period)
- Abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.

Class cover distribution (all vegetated classes)

Uneven

Duration of surface water in ≥ 10% of AA

Seasonal / Intermittent (SI)

Rating

0.9 H

14D. General fish habitat rating

Is this section applicable?

No. AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective (such as fish entrapped in a canal).

Rating

NA

14E. Flood attenuation

Is this section applicable?

Yes. Wetlands subject to flooding via in-channel or overbank flow.

Flood-prone width

900 feet

Bankfull width

30 feet

Entrenchment ratio (ER)

30.000

Percentage of flooded wetland classified as forested and/or scrub/shrub

25%-75%

Outlet

Unrestricted outlet

Rating

0.8 H

14F. Short and long term surface water storage

Is this section applicable?

Yes. Wetlands in the AA flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow.

Amount of water subject to flooding

1.1 to 5 acre feet

Duration of surface water at wetlands within the AA

Seasonal / Intermittent (SI)

Frequency that wetlands in AA flood or pond

≥ 5 out of 10 years

Rating

0.6 M

14G. Sediment/nutrient/toxicant retention and removal

Is this section applicable?

Yes. Wetlands in the AA have potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input.

Sediment, nutrient, and toxicant input levels within AA

Minor input levels. AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.

Percent cover of wetland vegetation in AA

≥ 70%

Evidence of flooding/ponding in AA

Yes

AA outlet

Unrestricted outlet

Rating

0.9 H

14H. Sediment/Shoreline stabilization

Is this section applicable?

No. AA does not occur in such a location.

Rating

NA

14I. Production export / food chain support

Acreage of vegetated wetland component in the AA

1-5 acres

AA outlet

Surface or subsurface outlet

Duration of surface water in AA

Seasonal / Intermittent (SI)

Vegetated upland buffer

Yes. There is an average ≥ 50 foot-wide vegetated upland buffer around ≥ 75% of the AA circumference.

Rating

0.9 H

14J. Groundwater discharge/recharge

Is this section applicable?

No. Groundwater discharge/recharge potential cannot be reasonably ascertained in the AA at this level of analysis. Explain in comments section.

Rating

NA

14K. Uniqueness

AA contains

- Plant association listed as "S2" by the MTNHP

Rating

0.6 M

14L. Recreation/education potential

Is this section applicable?

Yes. AA provides or could provide recreation or education opportunities.

AA is a

Known education/recreation site

AA does or could support

- Consumptive recreation
- Non-consumptive recreation

Access to recreation/education area is

Private or public ownership without general public access, or requiring permission for public access

Rating

0.10 M

Functions and values summary

Function and Value Variables	Rating	Functional Points	Points Possible	Functional Units	Four Prominent Functions
14A. Threatened/endangered species	L	0.0	1.0	0.00	
14B. S1, S2, S3 species	H	1.0	1.0	4.40	
14C. Wildlife habitat	H	0.9	1.0	3.96	
14D. Fish habitat	NA				
14E. Flood attenuation	H	0.8	1.0	3.52	•
14F. Surface water storage	M	0.6	1.0	2.64	•
14G. Sediment/nutrient/toxicant	H	0.9	1.0	3.96	•
14H. Shoreline stabilization	NA				
14I. Production export	H	0.9	1.0	3.96	•
14J. Groundwater	NA				
14K. Uniqueness	M	0.6	1.0	2.64	
14L. Recreation/education	M	0.10	NA	0.44	
Totals:		**5.80**	**8.0**	**25.52**	
Score:		**73%**			

Category I wetland (must satisfy **one** of the following)

Score of 1 functional point for threatened/endangered species
Score of 1 functional point for uniqueness
Score of 1 functional point for flood attenuation and potential for damage is significant
Score > 80%

Category II wetland (must satisfy **one** of the following)

- Score of 1 functional point for S1, S2, S3 species
- Score of 0.9 or 1 functional point for wildlife habitat
  Score of 0.9 or 1 functional point for fish habitat
  Ratings for both fish habitat = E or H
  Score of 0.9 functional point for uniqueness
- Score > 65%

Category III wetland

Criteria for other categories **not** satisfied.

Category IV wetland (must satisfy **all** of the following)

Rating for uniqueness = L
Vegetated wetland component < 1 acre (not including upland vegetated buffer)
Score < 35%

Overall analysis area rating: Category II