

Land Conservation Spending in Montana in Relation to the State Wildlife Conservation Strategy

A REPORT PREPARED FOR THE NATIONAL COUNCIL FOR SCIENCE
AND THE ENVIRONMENT

WILDLIFE HABITAT POLICY RESEARCH PROJECT

DEFENDERS OF WILDLIFE
TRUST FOR PUBLIC LAND

MaryBruce Alford, Frank Casey, Molly Cheatum, Andrew duMoulin,
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I. Introduction

This report describes and analyzes land conservation expenditures in the State of Montana for 1998-2007. The report constitutes one of five state studies to examine how land conservation expenditures were aligned with each state's wildlife habitat Conservation Strategy (State Strategy). For Montana, we investigate the extent to which land conservation expenditures overlapped with Montana's Tier 1 Focus Areas that are a component of its State Strategy. The report addresses three topics: a spending efficiency analysis; a financial efficiency analysis of land protection costs; and a policy analysis.

Under federal legislation, each state was required to complete a state wildlife conservation strategy by October of 2005 in order to remain eligible for State Wildlife Grant funds. These strategies were required to address eight congressionally mandated elements which included identifying species and habitats of greatest conservation need. Many states took the opportunity to map Focus Areas that represented the best areas for conservation of multiple species and habitats. The states used various methods to identify Focus Areas. Many states made it clear that the Focus Areas were not intended solely for acquisition and emphasized that maps illustrate sites of high biological significance and opportunity for a variety of conservation actions. In Montana, Focus Areas are composed of a range of habitat types and land uses, including natural and semi-natural landscapes, agricultural and forestry lands and existing developed or excavated areas. Developed and excavated lands are excluded in this analysis.

The spending efficiency analysis has three primary components: (1) to the degree possible, to describe and analyze public and private land conservation expenditures between 1998-2007; (2) to spatially map expenditures and acreages to determine the amount of geographic overlap with the Focus Areas identified in the State Strategy, and (3) to determine the percentage and amount of total conservation spending and acreage that aligned with the Focus Areas. The financial efficiency analysis examines the relative costs of protecting Focus Areas lands that had not been conserved as of 2007. These costs were estimated by consulting public and private expenditure data associated public and private land protection programs. Three types of land protection costs are compared: fee-simple purchase; permanent easements, and land rentals. In addition, land management costs associated with, fee-simple purchases and transaction costs for easements are included. The policy analysis looks at ways in which the state uses its resources, programs and policies to direct funding towards activities that will achieve the state's land and habitat conservation goals, including the State Strategy. The policy analysis also examines the extent to which a state is guiding conservation spending towards protecting areas defined as important habitat, including the Tier 1 Focus Areas.

The next section reports our findings with respect to spending efficiency in Montana by employing both descriptive and spatial analysis. Section III provides a policy analysis with respect to land conservation expenditures and their alignment with designated Focus Areas in Montana. Section IV provides estimates of what it would cost to conserve remaining Focus Areas that were not protected as of 2007. The last section offers some preliminary conclusions and recommendations with respect to aligning land conservation funding with the State Strategy, and which financial instruments may be more cost-effective in conserving unprotected Focus Areas.

II. Description and Analysis of Land Conservation Expenditures in Montana

The description and analysis of land conservation spending in Montana is composed of two interrelated topics. First, we provide estimates of the amounts spent and acreages protected by various public and private entities for land conservation for 1998-2007. Second, we provide, to the extent that spatial data was available, a spatial analysis that illustrates the amount of overlap between land conservation acres and expenditures and Montana's Terrestrial Conservation Focus Areas in Greatest Need (Tier 1), which we will refer to as Tier 1 Focus Areas, identified in the State Strategy. It should be noted that the State Strategy was only adopted in 2005, so we would expect that most of the overlap between conserved lands from 1998-2007 would be relatively recent. Therefore, the description and analysis of alignment with the Tier 1 Focus Areas (Section IIB) really serves more as a baseline rather than as an indicator of how strategic land conservation has been for the purpose of implementing the State Strategy.

A. Conservation Expenditures in Montana, 1998-2007

This section describes public and private land conservation funding sources in Montana and provides data on the number of protected acres and related expenditures (when available) by source of funding for 1998-2007. Major data sources include The Trust for Public Land's (TPL) Conservation Almanac, and TPL's LandVote database. We disaggregate the total funding and acreage reported above into five categories: state-level sources, federal programs that are and are not coordinated by state agencies, local funding sources, and private land trusts. Describing and analyzing expenditure data using these categories informs our policy proposals with respect to improving the alignment of conservation funding with Montana's Tier 1 Focus Areas.

State Government Land Conservation Expenditures

Montana does not have a statewide dedicated source of funding for land conservation. However, it expends internal agency funds to acquire lands for state parks and for prime wildlife habitat. Between 1998 and 2007, the state of Montana spent about \$45.7 million on land conservation, covering over 184,000 acres (Table 2.1). It should be noted that there are numerous land conservation projects with spending authorization, but which had not yet been completed at the time this study was carried-out and thus not counted. Based on Table 2.1, Habitat Montana accounted for nearly 82% of total expenditures and over 87% of the acreage protected from 1998 to 2007.

Table 2.1: Montana state land conservation expenditures and acreage, 1998-2007

State Program	State Agency	Expenditures (millions \$)	Acres
Habitat Montana	Montana Fish, Wildlife and Parks	\$37.7	159,651
Agricultural Heritage Program	Montana Department of Agriculture	\$888	9,462
Upper Clark Fork River Basin Restoration Funds	Montana Department of Justice	\$7.1	15,023
Total		\$45.688 million	184,136 acres

The Fish and Wildlife Division (FWD) of Montana’s Fish, Wildlife and Parks Department manages and acquires land for fish and wildlife habitat through a variety of programs, the main one being Habitat Montana. Funding is provided through hunting and fishing license fees, a Bighorn Sheep auction, and internal agency funds. Between 1998 and 2007 the agency acquired over 159,000 acres and spent \$37.7 million dollars, accounting for about 87 percent of all state funding for that time period.

The Montana Department of Agriculture (Department of Agriculture) acquired agricultural easements through the Agricultural Heritage Program (MAHP) from 2000-2003. The Montana Legislature created the program in 1999. Funding came from legislative appropriations and was utilized to purchase easements that furthered conservation of family farm, ranch and forestlands. The MAHP was consistent with conservation of rural landscape and assisted in the conservation of native wild species and their habitat. Through the program the Department of Agriculture now holds approximately 9,462 acres in easement and spent about \$888,000. The program ended in 2003 when it reached its statutory sunset date.

The Upper Clark Fork River Basin (UCFRB) Restoration Fund was created in 2000 as a result of a partial settlement between mining and mineral processing operations and the State of Montana. Funds are used to restore habitat and natural resources disrupted by the release of hazardous substances into the Upper Clark Fork River Basin. The restoration area is the portion of the watershed extending from the headwaters, surrounding the city of Butte, downstream to Milltown Reservoir and upstream to the city of Missoula. The Montana Department of Justice, through the Natural Resource Damage Program (NRDP), administers the Fund and an annual restoration grant program. Between 1998 and 2007, NRDP spent \$7.1 million to acquire 15,023 acres.

Federal Conservation Programs

Federal government funding sources are broken out into three categories: 1) federal land conservation programs that are managed by state agencies for which a state match may be necessary; 2) programs coordinated by the federal government that work with various partners, including, state agencies and 3) land conservation programs operated solely by federal agencies for the purpose of acquiring land for the federal endowment. An example of federal funds coordinated by the state is the Land and Water Conservation Fund which issues grants to states for land conservation activities related wildlife habitat and recreation. Individual projects are selected by a designated state agency. Examples of federal programs that involve public and private partners, and are coordinated by the federal government, are the USDA Farm and Ranchland Protection (FRPP) and the Wetland Reserve Programs (WRP). Under FRPP and WRP, the federal government must approve specific projects before funding is distributed. Lastly, there is federal funding used only by federal land agencies, such as the U.S. Forest Service, to purchase land that add to the public domain and/or implement land management activities on public lands.

Federal Conservation Programs Implemented by State Agencies

In Montana, there are four federal conservation programs whereby the state plays a management role with respect to land conservation and expenditures¹. Table 2.2 summarizes acreage conserved and expenditures for the programs active in Montana for 1998-2007. Over this time period, about 132,000 acres were protected at an investment of more than \$48 million, not including lands protected through the Cooperative Endangered Species Fund, the National Scenic Byways Program and the Recreational Trails Fund. No funding or acreage information was available for the Scenic Byways and Recreational Trails programs.

¹ In contrast to other some other states, Montana does not participate in the federal Coastal and Estuarine Land Conservation Program, the National Coastal Wetlands Conservation Grants, or the Coastal Resource Improvement Program.

Table 2.2: Federal land acquisition funding programs managed through state agencies, 1998-2007

Federal Program	State Agency	Program Spending (\$ million)	Acres Protected
Cooperative Endangered Species Conservation Fund	Montana Fish, Wildlife & Parks (FWP)	\$20.5	Not Available
Forest Legacy Program	Montana Fish, Wildlife & Parks (FWP)	\$26.9	131,890
Land and Water Conservation Fund	Montana Fish, Wildlife & Parks (FWP)	\$.951	65
National Scenic Byways Program and the Recreational Trails Fund	Montana Department of Transportation	Not Available	Not Available
TOTAL		\$48.3 million	131,955 acres

Although the National Scenic Byways Program and the Recreational Trails fund have contributed to the protection of open space, whether it is scenic, natural, recreational, historic, cultural, or archeological, data from the local state departments of transportation could not be obtained. This being the case, officials did indicate that the amounts spent and acres protected were not significant.

For overall land conservation expenditures in Montana, about 98% came through the combination of the Cooperative Endangered Species Conservation Fund and the Forest Legacy Program. Due to the lack of data from the Cooperative Endangered Species Conservation Fund, the National Scenic Byways Program, and the Recreational Trails Fund, the nearly 132,000 acres protected could be significantly underestimated.

Cooperative Endangered Species Conservation Fund (U.S. Fish and Wildlife Service)

Grants offered through the Cooperative Endangered Species Conservation Fund (authorized under section 6 of the Endangered Species Act) support participation in a wide array of voluntary conservation projects for candidate, proposed, and listed species. There are two

grant programs, the Habitat Conservation Plan (HCP) and Recovery Lands Conservation Grant.

HCP conservation grants provide funding to states and territories explicitly for land acquisitions that complement approved HCPs. These grants are available only for fee-simple purchases that go above and beyond the conservation responsibilities that non-federal partners already bear under the terms of the HCP. These grants complement but do not replace private mitigation responsibilities contained in HCPs. Protected acres have important benefits for listed, proposed, and candidate species and for the ecosystems that support those species.

Recovery Land grants provide funds to states and territories for the acquisition of habitat, through both fee-simple purchase and easement, in support of federally listed threatened and endangered species recovery. Funds must contribute to the implementation of a finalized and approved recovery plan for at least one species under the Endangered Species Act.

Between 1998 and 2007, \$20.5 million was spent using grants offered through the Cooperative Endangered Species Conservation Fund. The U.S. Fish and Wildlife Service measures program accomplishments in terms of benefits to species, and not acres. Additionally, the number of acres conserved is not reported because of the sensitivity of identifying specific locations where endangered species exist.

Forest Legacy Program (U.S. Forest Service)

The Forest Legacy Program (FLP) was established in 1990 to provide federal funding to states to assist in securing conservation easements on forestlands threatened with conversion to non-forest uses. Fee simple purchases are also allowed. Montana entered the program by submitting an Assessment of Need (Assessment) to the Secretary of Agriculture. State plans establish the lead state agency, the state's criteria for Forest Legacy projects, and Forest Legacy Areas within which proposed projects must be located. Once the Assessment is approved, the state lead agency can submit up to three grants each year for projects within Legacy Areas. The federal government may fund up to 75 percent of project costs, with at least 25 percent coming from private, state or local sources. Between 1998 and 2007, \$26.9 million was spent and about 132,000 acres were acquired using funds from FLP.

Land and Water Conservation Fund (National Park Service)

The Land and Water Conservation Fund (LWCF) program provides a 50 percent match to states for planning, developing and acquiring land and water areas for natural resource protection and recreation enhancement.

Funds are distributed to states based on population and need. Once the funds are distributed to the states, it is up to each state to choose the projects, though the National Park Service has final approval. Eligible grant recipients include municipal subdivisions, state agencies and tribal governments, each of whom must provide at least 50 percent matching funds in either cash or in-kind contributions and a detailed plan for the proposed project.

Between 1998 and 2007, about \$951,000 was spent and 65 acres acquired using LWCF.

National Scenic Byways Program and the Recreational Trails Fund (U.S. Department of Transportation, Federal Highway Administration)

The National Scenic Byways Program and the Recreational Trails fund are both supporting programs of the Department of Transportation Federal Highway Administration. Under the Byways program, the U.S. Secretary of Transportation recognizes specific roads as “National Scenic Byways” or “All-American Roads” based on significant archaeological, cultural, historic, natural, recreational, and scenic qualities.” Discretionary grants are also provided for scenic byway projects to aid in planning, designing and developing a State scenic byway program.

Funding for the Recreational Trails fund is derived from the Federal Highway Trust Fund, which is sustained in part through a portion of the motor fuel excise tax collected from non-highway recreational fuel use (i.e. fuel used by snowmobiles, all-terrain vehicles, off-highway motorcycles, off-highway light trucks). Funding is provided to States to develop and maintain recreational trails and facilities for all types of trail use, some of which include hiking, bicycling, in-line skating, equestrian, and snowmobiling.²

As indicated above, Montana does not have estimates of funding levels or acres protected under the National Scenic Byways Program and the Recreation Trails Fund.

Federal Land Conservation Programs with Partners

There have been six federal land conservation programs active in Montana that involve an array of partners. The federal agencies involved the Departments of Energy, Agriculture, Interior and Defense, and require state matching funds. In the case of agriculture, land conservation programs involve individual crop and livestock producers as partners. Across all six programs combined, federal-partner programs conserved about 85,000 acres and expended more than \$49 million from 1998 to 2007 (Table 2.3).

² <http://www.nttp.net/FHWAnttp.html>

Table 2.3: Federal and partner land protection programs in Montana, 1998-2007

Federal Program	Program Spending (\$ millions)	Acres Protected
Bonneville Power Administration	19.7	1,761
Farm and Ranch Lands Protection Program	6.8	Acres accounted for in Tables 2.1 and 2.5
Grasslands Reserve Program	4.115	21,688
North American Wetlands Conservation Act (NAWCA) grants program (U.S. Fish and Wildlife Service)	9.030	37,926
Readiness and Environmental Protection Initiative	0	0
Wetlands Reserve Program	9.375 ¹	23,427
TOTAL	\$ 49.02 million	84,802 acres

¹Appropriated dollars, not necessarily dollars spent

The Bonneville Power Administration accounted for about 40% of all conservation expenditures in Montana over this time period. The combination of the USDA Wetland and Grassland Reserve Programs accounted for over 45,000 acres (53%) of total land conserved.

Bonneville Power Administration (U.S. Department of Energy)

The Bonneville Power Administration (BPA) is a federal agency under the U.S. Department of Energy. A supporting program of BPA is its Wildlife Mitigation Program, which helps to mitigate impacts to wildlife caused by the development and operation of the Federal Columbia River Power System dams. Habitat is protected and enhanced through fee-simple purchases and conservation easements. Projects are selected based on recommendations and criteria set by the Northwest Power and Conservation Council. Tribal Governments, state agencies, property owners, private conservation groups, and other Federal agencies may

submit project proposals.³ Between 1998 and 2007, BPA's Wildlife Mitigation Program expended about \$19.7 million for the protection of approximately 1,760 acres.

Farm and Ranch Lands Protection Program (USDA Natural Resource Conservation Service)

USDA Farm and Ranch Lands Protection Program (FRPP) provide matching funds to assist in the purchase of development rights to keep productive farm and rangeland in agricultural uses. Local partners include state, tribal, or local governments and non-governmental entities. Grants are awarded by the Natural Resource Conservation Service (NRCS) on a competitive basis, according to national and state criteria and require up to a 50 per cent non-NRCS match. Up to 25 per cent of donated land value can be counted as the match.

Between 1998 and 2007, \$6.8 million was spent on FRPP in Montana. All the acres associated with these dollars have been included in the figures for either state or local government spending (Tables 2.1 and 2.5, respectively).

Grasslands Reserve Program (USDA Natural Resource Conservation Service)

The Natural Resource Conservation Service, Farm Service Agency and the U.S. Forest Service coordinate the Grasslands Reserve Program (GRP), which is a voluntary program offering private landowners an opportunity to protect, restore, and enhance grasslands. Between 2003 and 2007, GRP was used in Montana to protect over 21,600 acres with an expenditure of about \$4.1 million. GRP acres include both permanent and term easements of 20 and 30 years.

North American Wetlands Conservation Act (U.S. Fish and Wildlife Service)

The North American Wetlands Conservation Act (NAWCA) was passed in 1989 to provide matching grants for the acquisition, restoration, and enhancement of wetland ecosystems for the benefit of waterfowl and other wetland dependent migratory species. Administered by the U.S. Fish and Wildlife Service, grants are available to nonprofit organizations, state and local agencies, tribes, and private individuals in the U.S., Canada, and Mexico. Two types of grants are awarded; small grants for up to \$75,000 and standard grants for up to \$1 million. There is a 1:1 non-federal match requirement for each grant although the average match of successful proposals is over 2:1. Between 1998 and 2007, over \$9 million was spent on NAWCA grants, covering an area of about 38,000 acres. Ninety-four percent of these acres were protected through permanent easements.

Readiness and Environmental Protection Initiative (Department of Defense)

The Readiness and Environmental Protection Initiative (REPI) allows military installations to work with conservation groups as well as state and local governments to support defense readiness while protecting areas of land for conservation purposes in order to limit incompatible development or preserve biodiversity. By conserving land for environmental,

³ <http://www.efw.bpa.gov/IntegratedFWP/wildlife.aspx>

agricultural and recreational uses, the military and its partners are able to project training areas critical to national defense.

In 2002, as part of the National Defense Authorization Act for fiscal year 2003, Congress authorized Section 2684a of Title 10 United States Code,⁴ which allows the Military Services to enter into agreements with private conservation organizations or with state and local governments. These agreements allow the Service to cost-share the acquisition of conservation/restrictive-use easements and other interests in land from willing sellers – a way to preserve high-value habitat and limit incompatible development around military ranges and installations. Between 2003 and 2007, REPI was inactive in Montana.

Wetlands Reserve Program (National Resource Conservation Service)

The Natural Resource Conservation Service (NRCS) administers the Wetlands Reserve Program, a voluntary program offering landowners the opportunity to “address wetland, wildlife habitat, soil, water, and related natural resource concerns on private lands in an environmentally beneficial and cost-effective manner.”⁵

Between 1998 and 2007, over 23,000 acres were protected at a cost of approximately \$9.4 million. Of the acreage protected, about 74% was through the use of permanent easements.

Land Conservation by Federal Land Management Agencies

The land conservation funding described in this section pertains to Federal agencies that protect land solely for and through their own agencies, with no involvement by the state of Montana or private partners. These agencies include the Bureau of Land Management, the Bureau of Reclamation, the National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. Annual funding and acreage figures could not be obtained from the Bureaus of Land Management or Reclamation. The Bureau of Land Reclamation (BLR) is administered by the U.S. Department of the Interior and buys and owns land to build dams, power plants, and canals. However, expenditure and acreage data pertinent to these lands was not included because of their uncertain status as conserved lands.

From 1998 to 2007, federal land management agencies acquired over 190,000 acres and spent \$125 million on public land acquisition (Table 2.4). Expenditures by the U.S. Forest Service accounted for about 71% total spending over this time period. However, the U.S. Fish and Wildlife Service protected nearly 71% of total conserved lands.

⁴ 10 U.S.C. § 2684a

⁵ Natural Resource Conservation Service United States Department of Agriculture – Farm Bill 2002, Wetlands Reserve Program, Key Points - http://www.nrcs.usda.gov/Programs/WRP/2007_ContractInfo/2007WRPKeyPoints.pdf

**Table 2.4: Federal land conservation programs managed by
Federal agencies, 1998-2007**

Federal Agency	Spending (millions \$)	Acres Protected
National Park Service	\$.903	337
U.S. Fish and Wildlife Service	\$34.8	134,317
U.S. Forest Service	\$89.4	55,599
TOTAL	\$125 million	190,253 acres

Bureau of Land Management (U.S. Department of Interior)

The Bureau of Land Management (BLM) was established in 1946 through the consolidation of the General Land Office (created in 1812) and the U.S. Grazing Service (formed in 1934). The BLM is responsible for carrying out a variety of programs for the management and conservation of resources on 258 million surface acres, as well as 700 million acres of subsurface mineral estate. These public lands make up about 13 percent of the total land surface of the United States and more than 40 percent of all land managed by the federal government. Annual BLM data on land conservation expenditures and acreage protected was not available for Montana.

National Park Service (U.S. Department. of Interior)

The National Park Service was created in 1916 and now comprises 390 areas covering more than 84 million acres in every state (except Delaware), the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands. These areas include national parks, monuments, battlefields, military parks, historical parks, historic sites, lakeshores, seashores, recreation areas, scenic rivers and trails, and the White House. Between 1998 and 2007, the National Park Service spent over \$903,000 and protected approximately 337 acres in Montana.

U.S. Fish and Wildlife Service (U.S. Department. of Interior)

The National Wildlife Refuge System (NWRS) of the U.S. Fish and Wildlife Service (FWS), established over 100 years ago, has grown to nearly 95 million acres. It now includes 540 refuges and more than 3,000 waterfowl production areas spread across the 50 states and several U.S. territories. Between 1998 and 2007, \$34.8 million was spent and approximately 134,300 acres were added to the NWRS in Montana.

U.S. Forest Service (U.S. Department. of Agriculture)

The U.S. Forest Service was established in 1905 and is an agency of the Department of Agriculture. At present, it is comprised of 155 national forests, 20 national grasslands, five national monuments, the National Tallgrass Prairie, and six land utilization projects. These units are located in 44 states, Puerto Rico, and the Virgin Islands, and encompass over 192

million acres. Between 1998 and 2007, \$89.4 million was spent and about 56,000 acres were acquired in Montana using funds from the U.S. Forest Service.

Land Conservation Expenditures through Local Governments

Local government funding sources are entities with bonding/taxing authority such as counties, cities, regional organizations, and soil and water conservation districts. In Montana we examined three local governments that generated the largest dedicated sources of public funding for land conservation between 1998 and 2007. These include the City and County of Missoula, and Gallatin County (Table 2.5). We did not have sufficient data to examine smaller bond programs for Lewis and Clark and Cascade County's. Ravalli County made their first land conservation expenditure in 2009, outside of the time period of this study. Overall, about 36,000 acres of land were conserved with an expenditure of about \$15.4 million (Table 2.5). It should be noted that not all dollars expended from bond funds are used to acquire conservation land. Funds may be used for restoration and/or management of habitat, or for the acquisition of urban parkland, which may have minimal impact on wildlife habitat.

Table 2.5: Local land acquisition funding programs, 1998-2007

Local Government	Program Spending (million \$)	Acres Protected
City of Missoula	\$1.6	1,280
Missoula County	\$1.7	5,610
Gallatin County	\$12	29,010
TOTAL	\$15.4 million	35,900 acres

Gallatin County generated \$20 million through general obligation bonds for open space and farmland. In 2000, county voters passed a \$10 million bond with 59 percent support, thus launching Gallatin County's Open Space Program. The program met with such popular success that a second \$10 million open space bond passed in November 2004 with 63 percent of the vote. Between 2000 and 2007 Gallatin County has spent over \$12 million and acquired over 29,000 acres through the purchase of conservation easements.

The City of Missoula and Missoula County combined generated \$15 million through general obligation bonds to protect natural areas, water quality, and fish and wildlife habitats. In 1995, the City of Missoula passed a \$5 million bond for open space acquisitions. In 2006, Missoula County voters approved a \$10 million bond with 71 percent support. Half of that amount was dedicated to the city. Between 1998 and 2007, these entities have combined to spend almost \$3.3 million to protect nearly 7,000 acres.

In November 2006, voters in Ravalli County approved a \$10 million open space bond with 58 percent support and made their first land acquisition in 2009. In 1996, the city of Helena in Lewis and Clark County approved a \$5 million open space bond measure, and the city of Great Falls in Cascade County followed suit in 2003. Although both Lewis and Clark and

Cascade Counties were contacted for this study, we could not obtain expenditure or acreage data in time for this report.

Private Land Conservation

Private non-governmental organization (NGO's) funding sources consist of various land trusts, donors, private foundations, and other NGO's throughout the state. Given project resources we chose to study the largest and most active land trusts in Montana. These include the Gallatin Valley Land Trust, The Nature Conservancy, the Montana Agricultural Heritage Program, the Missoula County Bond Program, and the Montana Land Reliance (Table 2.6).

Table 2.6: Private land conservation expenditures and acres, 1998-2007

State or Local Program	Spending (\$ million)	Acres Protected
MT Agricultural Heritage Program	\$4.5	Acres counted elsewhere
Gallatin Valley Land Trust	GVLTL has on occasion used private funds to supplement county/state/federal funding	Acres counted elsewhere
Gallatin County Open Lands Board	\$1.1	Acres counted elsewhere
Missoula County Bond Program	\$2.5	Acres counted elsewhere
The Nature Conservancy	\$77.7	Acres counted elsewhere
TOTAL	\$85.8 million	Acres Counted elsewhere

Privacy issues, timing and other obstacles prevented us from realizing the full scale of private land conservation activity through land trusts. Attempts were made to contact other active land trusts, but for various reasons these organizations were not able to participate in this project. Conservation activity for the Trust for Public Land (TPL) was not included because TPL does not use private organization dollars to acquire land for easement or outright purposes. Therefore, acres that TPL helps to protect have likely been captured in other program and/or agency data collected for this report. For the land trusts represented, we estimate that about \$85.8 million was spent by private land conservation organizations (Table 2.6). Land trusts in Montana primarily hold on to easements and other land for local government entities. In all instances, the acreage conserved by these land trusts was counted in other program or agency data. In these cases, dollars spent by private land trusts to acquire land is many times a combination of state, federal or private foundation grants. Matching private dollars used in state or local programs are provided in Table 2.6.

Data collected for these organizations shows that the majority of private spending (91%) was accounted for by The Nature Conservancy.

Summary of Land Conservation Expenditures in Montana

Over all sources of public and private funding in Montana, we estimate that approximately \$369 million was spent on conserving about 561,000 acres from 1998 to 2007 (Table 2.7).

Table 2.7: Summary of land conservation funding and acres protected in Montana, 1998-2007

<i>Source of Funding</i>	<i>Program Spending (\$ millions)</i>	<i>Program Spending as a % of Total</i>	<i>Acres Protected</i>	<i>Acres Protected as a % of Total</i>
State	\$45.688	12%	184,136	29%
Federal with State Coordination	\$48.3	13%	131,955	21%
Federal with Partners	\$49.02	13%	84,802	14%
Federal Agency Only	\$125	34%	190,253	30%
Local	\$15.4	4%	35,900	6%
Private	\$85.8	22%	Included in other programs	-
TOTAL	\$369.208 million		627,046 acres	

Land conservation spending programs by the state of Montana accounted for about 12% of all conservation expenditures from 1998-2007, but over a quarter (29%) of the total acreage protected. Habitat Montana was the predominant state-funded land conservation program, accounting for almost 83% in total expenditures and 86% of the total acres protected.

Land conservation programs involving the federal government accounted for 60% of all expenditures and about 65% of all acres protected. Within this category, land conservation programs managed solely for and by federal agencies accounted for nearly 34% of expenditures and 30% of acres protected. Of the approximately 190,000 acres protected by federal land acquisition agencies, about 71% (134,000 acres) was conserved by the United States Forest Service.

For those local governments that we investigated, these entities accounted for about 4% of total land conservation spending and about 6% of the acreage conserved. It should be

noted, however, that not all local governments were included in this analysis, so the contribution from this category of government is likely higher.

Private entities such as land trusts, which are vital in providing technical assistance to facilitate land conservation, and accounted for about 22% of all expenditures, but the acres protected are accounted for under other state, federal, or local government programs.

Due to the lack of data for some funding sources, land conservation expenditures and acres protected for Montana are somewhat underestimated for 1998-2007. For example, we could not obtain annual land conservation expenditures or acreages from the Bureau of Land Management, Cascade and Lewis and Clark Counties, and some private land trusts. Similarly, our estimates of acres protected are low due to not having acquisition data for the federal Cooperative Endangered Species Fund.

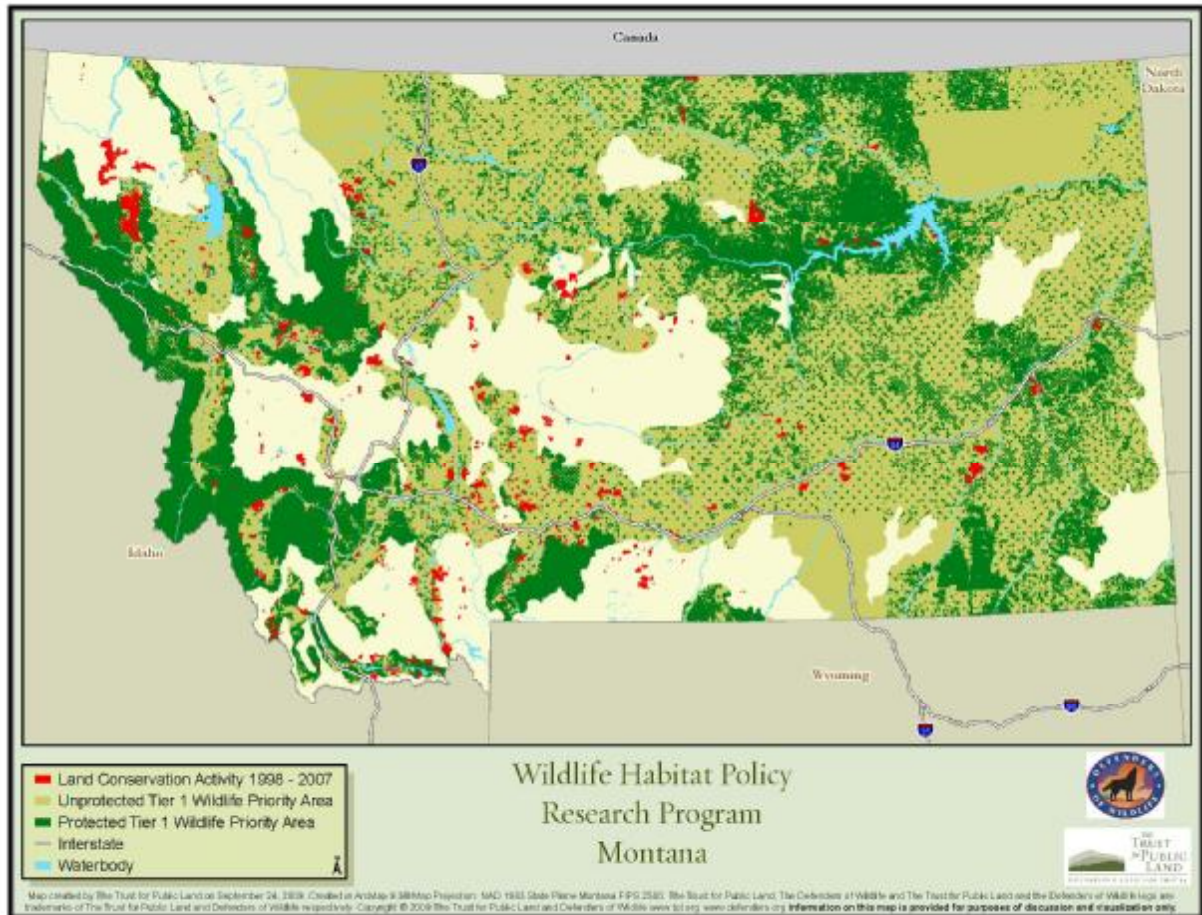
B. Spatial Analysis of Montana Conservation Expenditures

One of the major goals of this study was to assess the spatial efficiency of land conservation in Montana with respect to goals outlined in the Montana Comprehensive Wildlife Conservation Strategy (State Strategy). We measure spatial efficiency as the geographic alignment between Montana's Tier 1 Focus Areas identified in the State Strategy with land conservation expenditures from 1998-2007. This section provides (1) a description of the Tier 1 Focus Areas and the methods used to examine overlap between these areas and expenditures, and (2) an analysis of the alignment of expenditures and acres conserved with respect to Montana's Tier 1 Focus Areas.

In an effort to strategically focus resources and efforts, Montana Fish, Wildlife and Parks identified geographic focus areas in the landscape that contain fish and wildlife communities identified as being in greatest need for conservation. Four tiers of Focus Areas, Communities types and species were identified. Tier 1 Focus Areas are those with the greatest need and to which Montana Fish, Wildlife and Parks has a clear obligation to use its resources to implement conservation actions that provide direct benefit to these focus areas. The State Strategy only describes Focus Areas in Tier 1 in the Strategy document as these areas offer the best opportunity to conserve Montana's community types and fish and wildlife species.⁶ Map 2.1 displays the Tier 1 aquatic and terrestrial Focus Areas (merged) by protected status. Protected Tier 1 areas are shown in dark green and unprotected areas are shown in light green.

Concurrent to our study, Montana has been involved in a state-wide effort to update the conservation mapping that accompanies their State Strategy that will guide land conservation action in the future. This update, called the Crucial Areas and Connectivity Assessment, will come online in January 2010. The Assessment will employ a variety of spatial analyses to best identify and assess Montana's landscape for habitat quality, condition, wildlife use and recreational value. The recommendations from the Assessment will be used to develop broader scale, high level conservation policies with external partners. It is important to note that this up-date will likely be used to inform the revision of all Focus Areas, and therefore the priorities contained in the current Tier 1 Focus Area map.

⁶ Montana Comprehensive Wildlife Conservation Strategy. 2005. Montana Fish, Wildlife and Parks.



Map 2.1 Protected and unprotected Tier 1 Aquatic and Terrestrial Focus Areas identified in the Montana Comprehensive Wildlife Conservation Strategy.

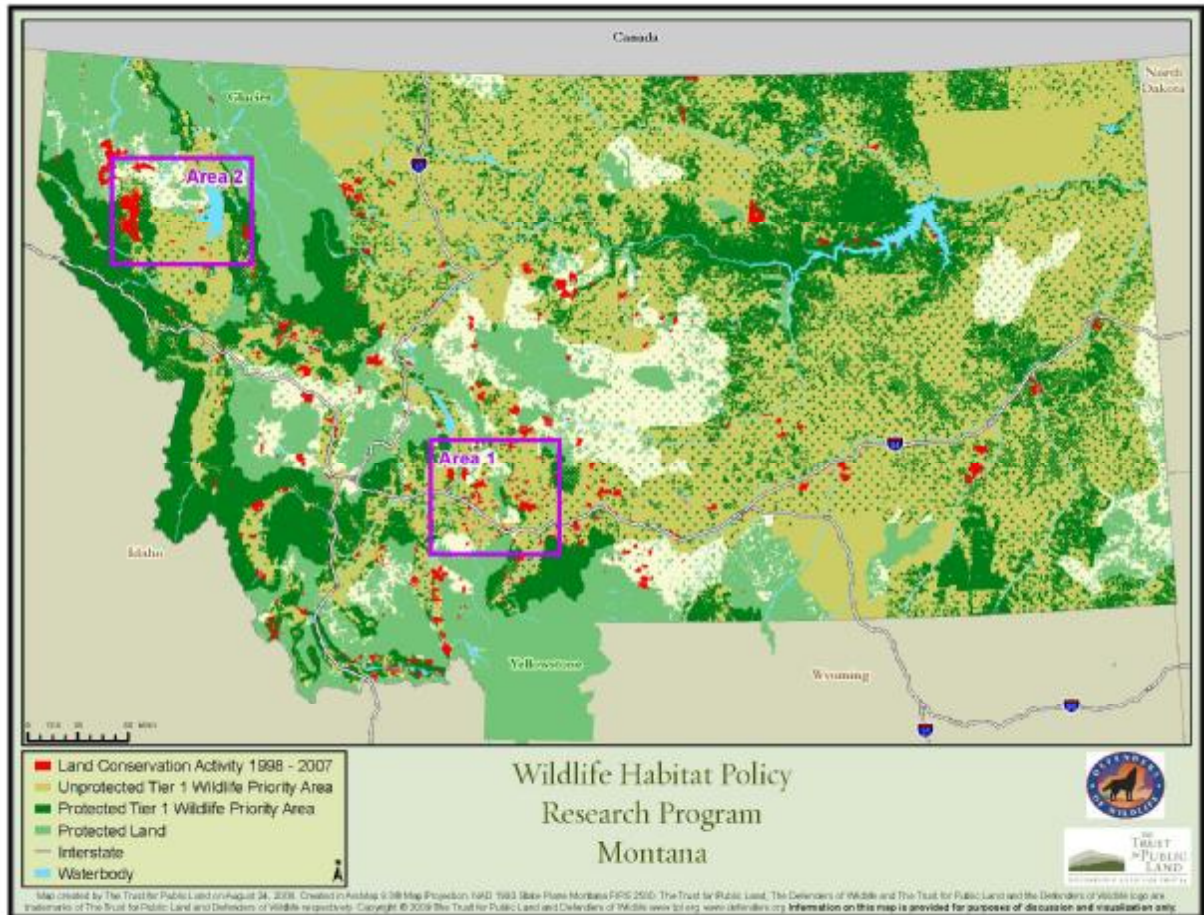
In order to overlay land acquisitions with Montana Tier 1 Aquatic and Terrestrial Focus Areas a digital spatial dataset was created that delineated the boundaries of properties acquired through fee simple purchase and as easements. The cost, date of completion, type of purchase, management authority, total amount of funding and funding by level of government were recorded for each property. Assembling this database required a variety of approaches due to structural differences in the spatial data provided by land management entities and the ease with which a spatial data record could be matched to its corresponding transactional data.

Spatial data for property boundaries were provided by Montana Fish, Wildlife and Parks, the US Fish and Wildlife Service's National Wildlife Refuges, US Department of Agriculture, Gallatin County, the Gallatin Valley Land Trust and The Nature Conservancy. Spatial data were manually created by using paper maps and websites of project boundaries for the Montana Agricultural Heritage Program, the City of Missoula, Missoula County and the Upper Clark Fork Restoration Fund. Finally, generalized boundaries were created for acquisitions by the National Park Service as no reference documents delineating the property boundaries were available.

We were able to collect spatial boundary information for other programs but were not able to obtain parcel specific transactional information that could be linked to the spatial data. These include the US Department of Agriculture's National Resources Conservation Service easement boundary data, which includes Farm and Ranchland Protection Program, the Grasslands Reserve Program and the Wetlands Reserve Program. Unfortunately, we were unable to include these boundaries in any phase of the analysis of overlap with wildlife priorities.

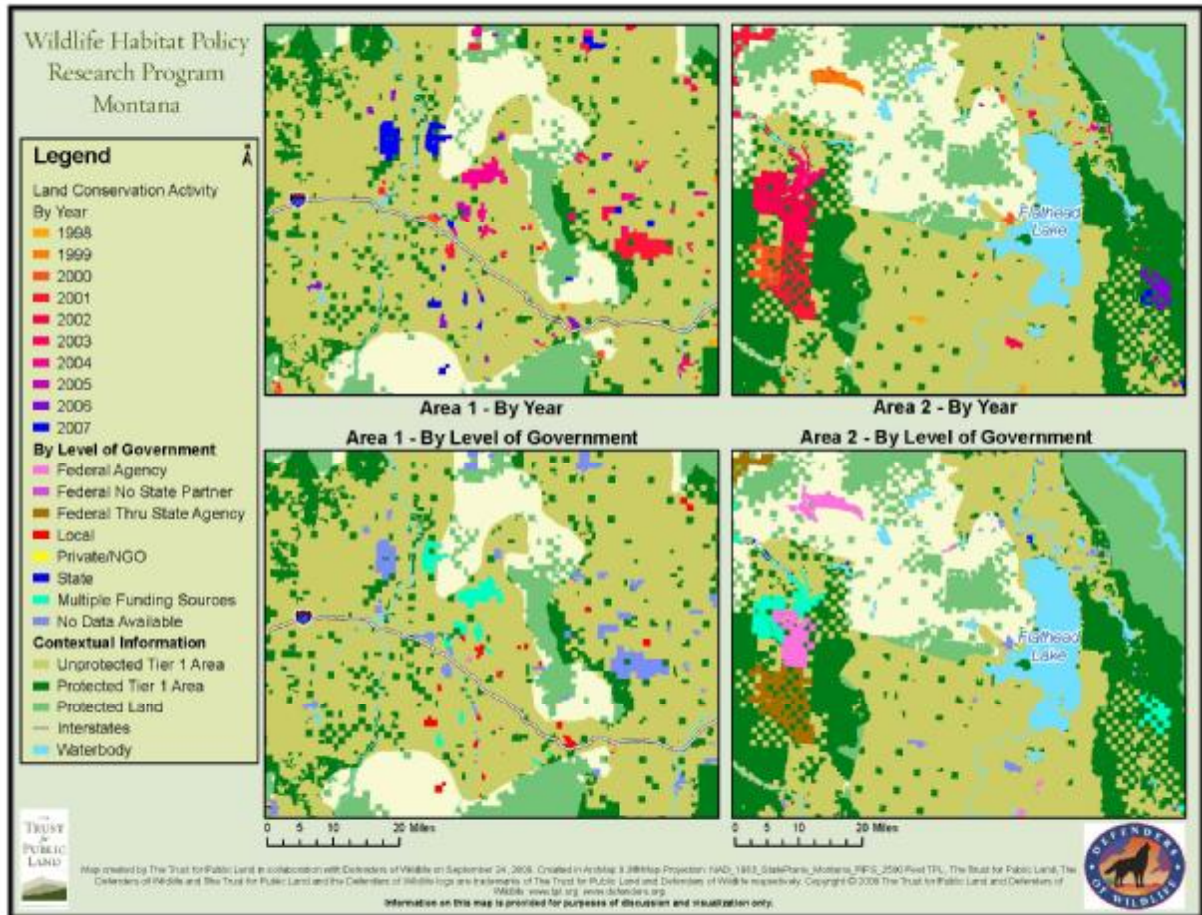
The state of Montana requires all organizations that are managing easements to provide the spatial data for a statewide easements dataset. This spatial data identifies the managing organization and the completion date of the easement but no other transactional information. This dataset identifies the property boundaries of easements managed by the Montana Land Reliance, the Five Valleys Land Trust and The Nature Conservancy. Unfortunately, as transaction information could not be obtained for these boundaries, the boundaries from these programs could not be included in the analysis of the overlap with Tier 1 Focus Areas by level of government. The date of purchase was included so this dataset was included and was used in the acreage analysis of overlap by year. Inclusion of this dataset in the yearly acreage calculations provided a much larger sample size for this aspect of the analysis than in the acreage analysis by level of government.

Once the spatial database was compiled, all the corresponding cost data were entered into the spatial database and then a quality control process was completed to make sure that there were no duplicate records for information from different sources. This was completed by using the Geographical Information System (GIS) "select by location" tool to identify any projects that overlapped. Once these were identified, the duplicate records were removed and noted in a work log.



Map 2.2: Protected and unprotected Tier 1 Focus Areas with land conservation activity from 1998-2007 and two areas highlighted for detailed analysis

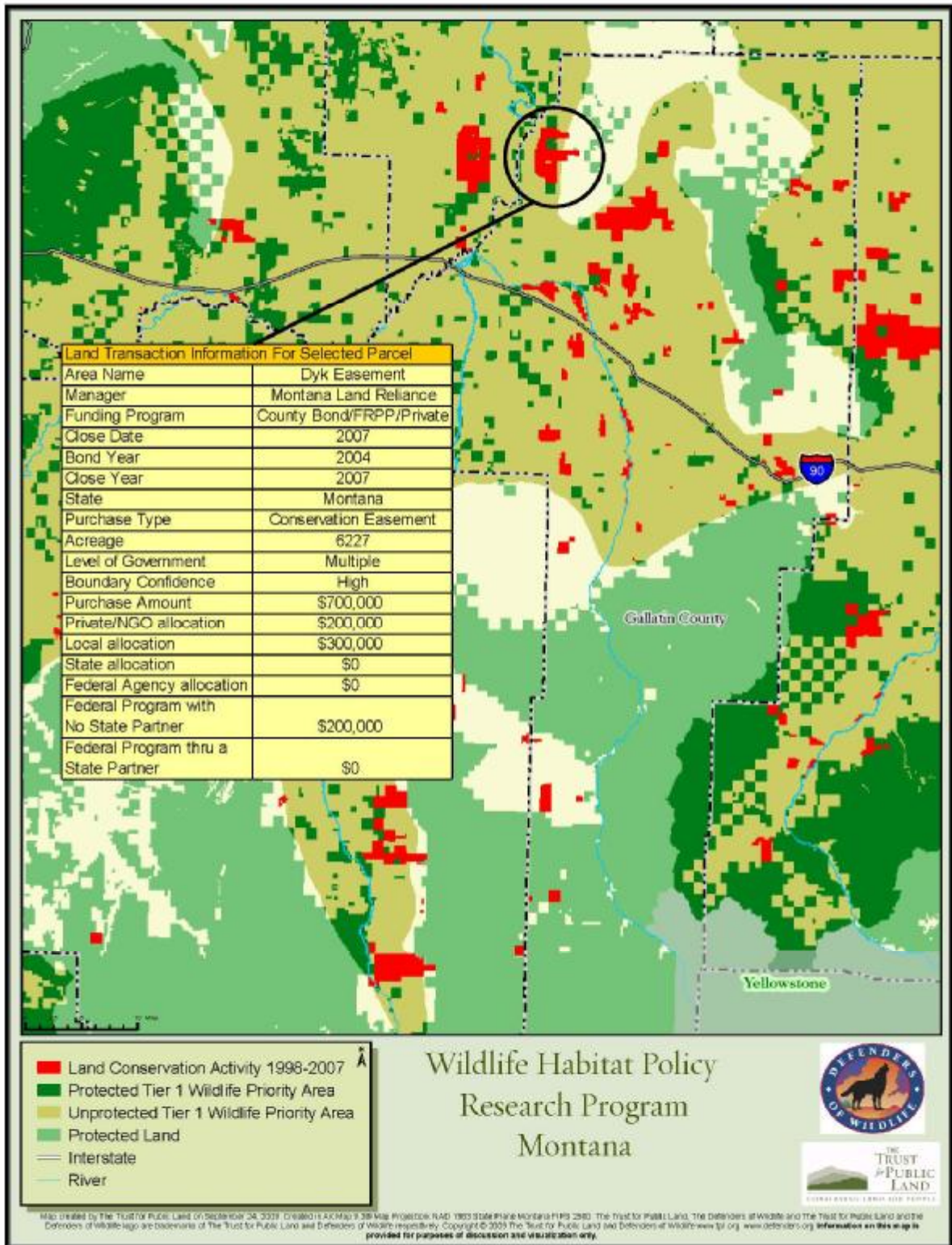
The spatial database was used to determine how conservation lands acquired in Montana overlapped with the Tier 1 Focus Areas. Map 2.2 shows land conservation activity from 1998-2007 (in red) in addition to the Focus Areas and protected status and highlights two areas that will be examined in more detail in figure 2.3 below. To determine the percent of total acres conserved between 1998 and 2007 that overlap with the Tier 1 Focus Areas, we completed a spatial intersect analysis in GIS. We used the intersect tool, which allows the user to calculate the acreage of land conserved (in red in Maps 2.2. and 2.3) that overlap with the Focus Areas. It is important to note that the State Strategies were not completed until 2005. Thus, there is no a priori reason to expect that conservation spending and Tier 1 Focus Areas will align. Furthermore, as Montana continues to refine its approach to land conservation through the development of the Crucial Areas and Connectivity Assessment, priorities are likely to shift. It is likely a diversity of objectives, priorities and opportunities have determined the spatial pattern of conservation in Montana between 1998 and 2007. Land acquisition through easements and fee simple purchases may have occurred in these areas for a number of reasons including prior recognition that they were important for conservation, landowner donation or interest in easement programs, or other conservation interests. There are always many factors that go into land acquisition decisions at federal, state and local levels.



Map 2.3: Land conservation activity (fee-simple acquisitions and easements) by year overlaid with protected and unprotected Focus Areas and the level of government that provided funding

We analyzed the percentage of total acreages protected and dollars spent on land acquisitions within the Tier 1 Focus Areas by year (between 1998 and 2007) and by funding source. Funding sources were categorized as private sector/NGO, local government, state agency or program, federal agency budget, a federal program with no state partner, and federal programs with state partners. All information on funding source, management agency, purchase type, etc was recorded as attribute information for each parcel recorded in the GIS database (Map 2.4).

Applying acreages by level of government was more difficult, as many projects received funding from multiple levels of government. In this analysis we applied the acreages for a project to the largest funding entity. An example would be if 100 acres were protected using funds from a private donor that gave \$50,000 and a state allocation of \$100,000, then the 100 acres were credited to the state level of government. If two funding programs provided equal funding, then the acres were credited to the more local entity, such as a local government using the FRPP program as the local dollars were required in order for the federal match to be made available.



Map 2.4: An example of a representative acquisition parcel and the attribute information that is recorded for each parcel.

We recorded a total of about 947,000 acres that were protected between 1998 and 2007 in Montana through fee-simple purchases and permanent easements (Table 2.8).

Table 2.8: Conserved acres and overlap with Montana Tier 1 Focus Areas, 1998-2007

<i>Source of Funding</i>	<i>Acreage</i>	<i>Acreage with Spatial data</i>	<i>Percent Acreage with Spatial Data</i>	<i>Mapped Acreage in Focus Areas</i>	<i>Percent of Mapped Acreage in Focus Areas</i>
Fed thru State	131,890	100,389	76%	58,680	58%
Fed with Partners	49,564	5,034	10%	5,034	100%
Fed Agency	190,253	99,427	52%	61,985	62%
Total Federal	371,307	204,850	55%	125,699	61%
State	184,136	170,638	93%	143,451	84%
Local	33,212	31,190	93%	28,015	90%
Private	358,079	8,690	2%	7,378	84%
TOTAL	947,144	415,368	44%	304,533	73%

Of this area we were able to map approximately 44% of the total (about 415,000 acres). Of the acres that could be spatially mapped, about 304,500 acres or (or 73%) overlapped with Montana's Tier 1 Focus Areas.

For the total federal protected acreage (about 371,000 acres), we could map about 55% of all acquisitions, with almost all of these coming from the federal programs coordinated by state agencies and federal land acquisition programs for federal land units. Only a small percentage (about 10%) of acres conserved through the federal partnership category could be mapped. Of the total federal program acres that could be spatially mapped (about 205,000 acres), 61% aligned with Montana's Focus Areas. One-hundred percent of all federal-partner acres overlapped with the Tier 1 Focus Areas and a high percentage of the mapped acres for the federal through state and federal agency acres, 58% and 62%, respectively, fell within these areas.

Ninety-three percent of all acres acquired by the state (about 171,000 acres) could be mapped. Of these acres, 84% aligned with the state's Tier 1 Focus Areas.

Local government land conservation efforts in Montana accounted for about 33,000 acres. Most of this area (93%) could be spatially represented. Of those acres that could be mapped, a very high percentage (90%) fell within Montana's Tier 1 Focus Areas.

Private land acquisitions (i.e. land trusts) accounted for the second largest category of protected acres at 358,000 acres. However, only about 2% of these acres could be spatially mapped. Of the land area that could be mapped (about 8,680 acres); about 70% fell with the Montana's Tier 1 Focus Areas.

Table 2.9 shows the total amount of expenditures by source of funding over the 1998-2007 time frame, the dollars and percent of funding that we were able to map and include in our spatial analysis, and the amount and percentage of the mapped funding that aligned with Montana's Tier 1 Focus Areas. For all conservation expenditures in the state which we could record from 1998 to 2007 (over \$369 million), about 37% could be mapped. Of those expenditures that could be mapped, 75% fell within the state's Tier 1 Focus Areas.

Table 2.9: Conservation spending and overlap with Montana Tier 1 Focus Areas, 1998-2007

<i>Source of Funding</i>	<i>Total Spent (\$ millions)</i>	<i>Spending with Spatial Data (\$millions)</i>	<i>Percent Spending with Spatial Data</i>	<i>Tier 1 Focus Area Expenditures</i>	<i>Percent Tier 1 Focus Area Expenditures</i>
Fed thru State	48.3	35.7	74%	26.0	73%
Fed no State	49.02	11.2	23%	10.3	92%
Fed Agency	125.1	29.7	24%	21.7	73%
Total Federal	222.42	76.6	34%	58	76%
State	45.688	40.0	88%	25.1	63%
Local	15.4	12.5	81%	12.4	99%
Private	85.8	8.5	10%	7.4	86%
TOTAL	369.31	137.7	37%	102.9	75%

Federal programs combined spent over \$222 million over 1998-2007. About 34% of total combined federal program expenditure could be mapped. Only about a quarter of expenditures in the federal-partner and the federal agency categories could be mapped. Of the total federal expenditures that could be mapped, 76% fell within the Tier 1 Focus Areas. Nearly all of the federal-partner expenditures that could be mapped aligned with these areas.

Of the nearly \$46 million dollars spent by the state of Montana between 1998 and 2007, we could spatially depict about \$40 million, or about 88% of total state expenditures. Of the \$40 million in expenditures that could be mapped, over \$25 million (63%) aligned with the Tier 1 Focus Areas.

Conservation spending at the local government level was estimated to be a little over \$15 million. Of this amount, \$12.5 million (or 81%) could be spatially represented. Furthermore, of the \$12.5 million that could be mapped, \$12.4 million (99%) was aligned with the state's Focus Areas.

The private sector (i.e. land trusts) provided almost \$86 million from 1998 to 2007 for land protection in Montana. However, only \$8.5 million (10%) of total private expenditures could be mapped. Of those expenditures which could be mapped, 86% (about 7.4 million acres) aligned with the Montana's Tier 1 Focus Areas.

III. Policy Analysis of Montana State Land Conservation

A key component of land conservation is the way in which states use policies and programs to direct funding towards activities that will achieve their conservation goals. In this section, we examine Montana's land conservation policies and programs to help explain the spatial patterns of land protection described in Section IIB. We seek to determine the degree to which the policies are used to align expenditures for land acquisition in Montana with protection of the state's Tier 1 Focus Areas. We examine whether the state is guiding spending towards protecting the areas it considers the most important habitat areas.

Montana's conservation policy environment can be characterized in a variety of ways, including the philosophy behind conservation activity in the state, relative spending levels compared to other states, the stability of major funding programs, features of key programs, management of land protection information, and how effectively the state is promoting its Conservation Strategy.

At the base of most land conservation work in Montana is a high level of regard for outdoor recreation, hunting, and fishing. The citizens of Montana recognize that their state has magnificent landscapes and marvelous wildlife, and they have been willing to invest in protecting those assets and providing public access to those resources for citizens and visitors.

While having a relatively small population, ranking 43 out of the 50 states, Montana has a relatively high level of spending to protect conservation land. There is not a simple formula to indicate the "right" amount of spending, since the circumstances among states differ greatly. During the period of this study, 1998-2007, 60% of the land conservation spending in Montana came from federal sources, 12% from state sources, 4% from local government sources, and 22% from private sources (Table 2.7).

Most of the federal money went to Montana through programs that the state has little control over. Sixty-seven percent of federal funding, \$125.1 million was spent by federal programs to acquire land for federal land management agencies including the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the National Park Service. An additional 6% of federal spending (\$11.4 million) came through federal partner programs, such as the North American Wetlands Conservation Act grants. The remaining 26% of federal spending, \$48.3 million, was provided to Montana Fish, Wildlife & Parks (FWP) through federal programs such as the Forest Legacy Program.

Montana had three programs funded by the state during the study period which represented about one quarter of all land conservation spending in the state. The largest, Habitat Montana, provided FWP with \$37.7 million, which represented 87% of the state's funding for conservation land. A source of money for this program is revenue from hunting licenses which runs about \$3 million per year and is a fairly stable funding source.

The second largest state funding program is the Upper Clark Fork River Basin Restoration Fund which is administered by Montana's Department of Justice. This program provided \$7.1 million in funding, 15% of the total state funding, to restore the Basin's public natural

resources. It is funded from a \$130 million settlement with Atlantic Richfield Company tied to cleaning up a super fund site.

Finally, Montana had a state-funded program administered by the Department of Agriculture, called the Agricultural Heritage Program, which was in place from 1999 to 2003. This program provided about \$888,000 to purchase easements on farms, ranches and forestlands. It was funded by an initial \$1 million appropriation from the general fund and would have required annual legislative appropriations, had it been extended.

Montana also has a quasi-state program for land conservation funded by the Montana Fish and Wildlife Conservation Trust. The trust was established as a public trust with a private trust administrator, the Montana Fish Wildlife and Parks Foundation. The Trust was funded with \$15 million in proceeds from purchases of plots by cabin owners on U.S. Bureau of Reclamation property at Canyon Ferry Reservoir between 2002 and 2005. Earnings from the trust provide a permanent source of funding to restore and conserve wildlife habitat.

A sample of three local governments in Montana provided over \$15.4 million in funding from 1998 to 2007, and this source is likely to grow in the future. The City of Missoula passed an open space bond measure in 1995 which yielded \$1.5 million in funding during the study period. Three counties passed bond measures during the study period. Gallatin County's bond measure in 2000 generated funds of \$12.1 million and Missoula County's 2007 bond measure generated \$2.1 million. Through 2007, these three counties spent less than half of the \$40 million in public funding their citizens approved, which means this segment of funding could be substantial for land protection within the state in the future. Ravalli County passed a bond measure in 2006, but did not spend any of the approved funds until 2009. Cascade and Lewis and Clark County's passed \$5 million open space bond measures in 2003 and in 1996, respectively, but time constraints prevented us from including data from these programs for incorporation into this analysis.

Montana has an active land trust community. The Montana Association of Land Trusts was created in 2006 to provide land trusts in the state with legislative, administrative, communications, and policy support. Although not an exhaustive account of all expenditure activity, we estimate that land trusts spent about \$85.8 million between 1998 and 2007, representing about 23% of total land conservation expenditures in the state for that time period.

One of the key features of all land conservation programs active in Montana is an emphasis on voluntary programs to encourage conservation on private lands. There is a strong sense in Montana that private lands should remain privately owned and working lands should stay in family ownership. This is likely a response, in part, to the large amount of publicly-owned land – one third of Montana's 94.1 million acres is publically owned: 27.1 million acres by the federal government and an additional 5.1 million acres is state school trust land.

In recognition of the desire to conserve private land, land protection is accomplished much more often with a conservation easement than through fee simple purchase. Eighty-two percent of the acres protected during the study period were protected with easements. This is a very high percentage compared to the U.S. overall. Based on data in TPL's Conservation Almanac, of all the acres protected in the U.S. between 1998 and 2005, only

31% was protected by easement, and only 13 states – including Montana – protected more acres by easement than by fee simple acquisition. The use of easements in Montana holds across all of the funding sources, with local governments protecting 96% of the acres with easements, state programs protecting 84% of the acres with easements, and even federal programs protecting 79% of their lands with easements.

In addition to being one of the leading users of easements among the states, Montana also is a leader in defining the terms of public oversight of easements and establishing mechanisms for collecting and reporting easement data. In 2005, a Senate Joint Resolution requested a performance audit of conservation easements. This was prompted, in part, by members of the Montana land trust community who wanted an objective assessment of the use of easements to dispel what they believed were myths about their impact on private property values and on the tax base which could discourage property owners from placing easements on their property.

The Performance Audit Report to the Legislature, published in January 2007, provided a thorough analysis of easement activity in the state and concluded that easements did not decrease property tax collection because of property reclassification. The auditors estimated that the cumulative public investment in easements in Montana was more than \$100 million. This included an estimated \$1.7 to \$3 million per year in indirect public funding of easements that resulted from tax deductions for charitable contributions of easements. The report linked the public investment and the expectation of public benefits to a need for increased public oversight of easement transactions to protect the conservation values and the public trust. In this light, the report recommended improved data collection and legislation to improve oversight mechanisms.

Based on these recommendations, the state passed the Montana Land Information Act in 2007 (MCA 90-1-4) and established the Montana Land Information Advisory Council to develop methods to collect digital land information in a consistent manner, maintain it accurately, and make it commonly available. Montana law requires that easement agreements be recorded in county land records. The state Department of Revenue is responsible for collecting county-level easement data from county clerks and recorders, and the Department of Administration is responsible for incorporating easement data into the state's cadastral database. The historical easement records that had been maintained voluntarily by the Montana Natural Heritage Program are being included in the cadastral database, too. Montana recognizes that these efforts could create one of the most complete data repositories related to easements in any state. In addition to being able to provide policy makers with robust data to guide policy decisions relating to easements, Montana's system could also serve as a model that other states may want to consider.

Another aspect of Montana's policy environment is the way in which the state is promoting its State Strategy. FWP has an active outreach program to partner with other organizations and leverage combined resources. In October 2006, following meetings with the public and with partners, FWP published a 5-year implementation plan, "Implementation Planning Process for Montana's comprehensive Fish and Wildlife Conservation Strategy." This plan offered a practical subset of conservation priorities that FWP encourages its partners to implement by 2011. FWP appointed a steering committee to work with the agency to help implement the strategy. This led to the establishment of the Conservation and Restoration

Partnership to help FWP increase understanding of the Strategy throughout Montana and work towards its implementation.

There is an important element that is lacking in the state's policy environment that could enhance the effective implementation of Montana's Conservation Strategy. There is a need for an entity that looks at all land conservation spending on a consolidated basis and develops a mechanism to track, analyze, and report on the data. This would include all sources of funding, including state funds as well as federal, tribal, and local government funds and funds from private organizations such as land trusts and NGOs. By having access to this type of information, the state would be better able to ensure that its plans leverage the broadest range of potential programs that could fund implementation of its strategy.

IV. Estimated Costs of Conserving Un-Protected Tier 1 Focus Areas

The purpose of this section is to provide a general (average), statewide cost estimate for conserving lands identified as lying within Montana's Tier 1 Focus Areas, which, as of the end of FY 2007, had not yet been protected. Because we are not including 2008 and 2009 land conservation activity, the costs reported here may be somewhat overestimated.

To determine the cost of conserving the unprotected Tier 1 Focus Areas we calculated the acreage of protected and unprotected Focus Areas using the Protected Areas Database (PAD-US). The PAD-US is a digital map of steward boundaries that combines attributes of ownership, management, and a measure of intent to manage for biodiversity. The map includes: 1) Geographic boundaries of public land ownership and voluntarily provided private conservation lands (e.g., Nature Conservancy Preserves); 2) Combination of land owner / manager, management designation descriptor, parcel name, and source of geographic information of each mapped land unit; 3) GAP Status Code conservation measure of each parcel based on USGS National Gap Analysis Program (GAP) protection level categories and that are intended to provide a measurement of management commitment for long-term biodiversity conservation derived from land management plans or land manager interviews; and 4) IUCN category for a protected area's inclusion into UNEP-World Conservation Monitoring Centre's World Database for Protected Areas. With the PAD-US database we completed an overlay analysis in GIS using the intersect function to determine the total unprotected acreage within Tier 1 Focus Areas. The total unprotected acreage across the state was estimated to be approximately 62.6 million acres in 2007.⁷

Following this analysis, we estimated land conservation costs based on three separate investment strategies: fee simple purchases, conservation easements, and land rentals. We estimated the costs associated with these three strategies on both a one-time basis and over a thirty-year time period. For the thirty-year time period we assumed the total amount of acres to be protected is done so in 30 equal increments and assumed a 3% annual increase in land prices over-and-above inflation. For our fee-simple purchase estimates we added annual management costs. For the easement strategy, we provide estimates for up-front, one-time transactions costs, but do not include these in our overall analysis because of the difficulty in translating these costs on a per acre basis.

We first discuss the methods we used for estimating state wide average prices for the three conservation strategies and then report the results.

A. Cost Estimation Methods

Fee-Simple Purchase Acquisitions

Cost data on fee-simple purchase acquisitions comes from two sources: (1) TPL expenditure data collected from federal, state, local, and private sources; and (2) data compiled by the National Agricultural Statistics Service (NASS) on private commercial transactions involving

⁷ This number excludes land cover categories considered unsuitable for terrestrial wildlife habitat such as open water, perennial snow/ice, developed open space, developed low intensity, developed medium intensity, developed high intensity, and barren land.

crop and pasture land (2007) (Table 4.1). The TPL data consists of 26 land acquisitions in Montana between 2006 and 2007. All 2006 acquisitions were adjusted to reflect 2007 price levels by using the Real GDP quantity index provided by the Council of Economic Advisers (2009).

Table 4.1: Fee-simple costs per acre in Montana

<i>Data Source</i>	<i>Cost per Acre (\$ 2007)</i>
TPL spending data	\$3,002
NASS cropland data	\$1,000
NASS pasture land data	\$850

Calculating Statewide Fee-Simple Costs

We estimated statewide average per acre fee-simple costs by weighting costs by land cover types found within the unprotected Tier 1 Focus Areas. For this analysis we used the National Land Cover Database 2001 (NLCD 2001) which has been compiled across all 50 states and Puerto Rico as a cooperative mapping effort of the Multi-Resolution Land Characteristics 2001 Consortium. This land cover database was created using mapping zones and contains 28 standardized land cover types. Total acreage of forest, shrub, grassland, cropland, pastureland, and wetlands were calculated within the unprotected Tier 1 Focus Areas.

To estimate fee-simple costs by land cover type we overlaid the TPL land acquisition parcels from 2006 and 2007 with the Tier 1 Focus Areas and used the subset of parcels that fell within the Focus Areas. We then determined the land cover for each parcel using the NCLD database described above. Spending data was only collected from acquisitions that had over 65 percent of one land cover type.⁸ Unfortunately, we were unable to use this analysis because there were not enough land acquisition parcels that matched our criteria in each land cover category. We instead used the NASS cost per acre for cropland and pastureland (Table 4.1) and multiplied it by the unprotected acreage. We consolidated all other land cover categories into one “other” category and used the average cost per acre of the TPL spending data, since the majority of acquisitions within this data set had mixed land cover. The land cover percentages are as follows: cropland 19.71%⁹; pastureland, 2.71%¹⁰; and “other” 78.17%¹¹. Table 4.2 shows weighted fee-simple cost estimates for Montana.

Table 4.2: Montana weighted fee-simple costs (\$ 2007)

<i>Land Cover</i>	<i>Percentage</i>	<i>Acres</i>	<i>Cost per Acre</i>	<i>Total Cost</i>
Cropland	19.71%	12,343,598	\$1,000	\$12,343,597,867
Pastureland	2.12%	1,329,013	\$850	\$1,129,660,965.
Other	78.17%	48,952,214	\$3,002	\$146,971,666,145
Total	100.00%	62,624,824	\$2,562	\$160,444,924,978

⁸ For a more complete analysis of how the spatial and spending data was collected, see Section II of this report.

⁹ Defined as “Cultivated Crop” land cover in GIS data

¹⁰ Defined as “Pasture/Hay” land cover in GIS data

¹¹ This includes Deciduous Forest, Evergreen Forest, Mixed Forest, Shrub/Scrub, Grassland/Herbaceous, Woody Wetlands, and Emergent Herbaceous Wetlands.

Across all land types, the statewide average cost for fee-simple land purchase in Montana is estimated to be about \$2,560 per acre.

Management Costs

We define management practices as all practices/investments which contribute to the overall integrity of the habitat protected, including site construction, biotic surveys, habitat restoration, habitat maintenance, public services, reporting, office maintenance, field equipment, operations, as well as contingency and administration (including overhead)¹².

To estimate habitat management costs, we collected data from private nonprofits, local governments, state agencies, and the National Wildlife Refuge System (NWRS). Many land management entities, however, could not provide management cost data for the following three reasons: (1) they did not keep track of management costs as separate from other expenditures; (2) the costs varied significantly from one property to another, so an average management cost could not be provided; and/or (3) the available data only represented the portion of the properties' total management cost that a particular agency partly funded. Table 4.3 shows management cost estimates for selected public and private land conservation organizations.

Table 4.3: Management costs of land acquired through fee-simple purchases in Montana

<i>Data Source</i>	<i>Total Costs</i>	<i>Total Managed Acres</i>	<i>Cost per Acre (\$ 2007)</i>
The Nature Conservancy (TNC) ¹	\$1,226,154	381,889	\$3.21
City of Missoula ²	\$1,800,000	36,000	\$50.00
Montana Fish, Wildlife and Parks (FWP) ³	\$1,225,000	343,135	\$3.57
National Wildlife Refuge System (NWRS) ⁴	\$5,327,816	1,166,903	\$4.57
Average Management Cost	\$9,578,970	1,927,927	\$4.97

¹ Personal Communication. Chase Warden. The Nature Conservancy. October, 2008.

² Personal Communication. Jackie Corday. City Of Missoula. November, 2008.

³ Personal Communication. James Colgrove. Montana Fish and Wildlife Program. November, 2008.

⁴ Personal Communication. Gary Sullivan. USFWS. February, 2009. These costs included special accounts for fire and maintenance which are spread out over several land management agencies and sites. Thus, USFWS costs may be somewhat overestimated.

¹² Personal Communication. Joanne Rodriguez. Center for Natural Land Management. August, 2008.

Due to time and budget constraints, it was not possible to conduct an in-depth analysis of every management activity/investment required to adequately manage a property in perpetuity. As a result, we relied on readily available data that the various data sources could provide.

We estimated the statewide cost per acre by dividing the total management costs by the total acreage of managed lands from each data source. Costs for the City of Missoula and the Montana FWP are current cost estimates.

Average land management costs for Montana are estimated to be about \$5.00/acre (Table 4.3). The costs from three of the sources are all fairly inexpensive, ranging from \$3.21/acre to \$4.57/acre. The estimated management costs for The Nature Conservancy includes the costs of managing both fee-simple purchases and conservation easements. In general, it is more expensive to manage fee-simple lands, so the TNC per acre costs are likely an underestimate. The City of Missoula spends about \$50/acre for land management, but it was indicated that the amount required for more comprehensive management would be closer to \$100/acre¹³. There are two possible reasons why the City's costs are so much more expensive than those of the private conservation organizations. First, the City's land is presumably closer to more urban or suburban areas. Therefore, they require more upkeep due to more public use. Second, the City manages much fewer acres and costs are spread out over smaller tracts. A report by the Center for Natural Lands Management (2004) found that the cost per acre of managing lands decreases as the size of the property increases.

Although the land management costs given in Table 4.3 provide ballpark estimates, they have limitations. The level of detail associated with costs varies significantly from one source to another. Some sources could only provide general per acre management costs with little or no detail. Other sources provided a very detailed breakdown of the cost of the activities that were funded. Table 4.4 shows the range of activities/investments that comprise management costs.

It is important to note that there are several other factors, besides size, that influence the management costs of a property. These include the property's location (e.g., its proximity to urban areas), land cover, the presence of invasive species, previous use of the land before it was acquired, etc. Nonetheless, we believe the estimated costs provide a general indication of what it takes to manage currently unprotected priority lands in Montana for wildlife habitat values. Future studies on management/stewardship costs should investigate in detail what management costs would be for a specific project site.

¹³ Personal Communication. Jackie Corday. City of Missoula Open Space Program. November, 2008.

Table 4.4: Types of land management activities for Montana

<i>Data Source</i>	<i>Form of Data</i>	<i>Management Activities/Investments</i>
The Nature Conservancy	FY08 Stewardship Budget	<ul style="list-style-type: none"> - Salary & Fringe - Contractual - Communications - Travel - Supplies & Equipment - Occupancy - Other Expenses - World Office Assessment
City of Missoula	Open Space Program	<ul style="list-style-type: none"> - Salaries - Broad-based weed management (including chemical, biological [insects], sheep grazing, and volunteer hand-pulling - Public access (e.g., trail maintenance, signs, etc.)
Montana Fish, Wildlife, and Parks	FWP Wildlife Habitat	<ul style="list-style-type: none"> - Salaries - Fencing - Weed Control - Road Repair - Infrastructure Repair - Restoration
National Wildlife Refuge System	Estimated Base Budget and Permanent Positions for Refuge Complexes/Refuges in Montana; Also included special accounts for fire and maintenance	<ul style="list-style-type: none"> - Salary and Benefits - Overhead (supplies, space, etc.) - Fire management and maintenance (e.g., purchase of heavy or small equipment)

Cost of Establishing Conservation Easements

Cost data for establishing conservation easements come from two sources: (1) Expenditure data that TPL collected from federal, state, local, and private sources; and (2) data from the USDA Grassland Reserve and Wetland Reserve Programs. We estimated the average cost for conservation easements by weighting the total cost of easements for each land category

by the total acreage protected in that category. The average cost of an easement is estimated to be approximately \$546/acre (Table 4.5)

Table 4.5: Conservation easement costs per acre (\$ 2007)

<i>Data Source</i>	<i>Total Acreage</i>	<i>Total Cost</i>	<i>Cost per Acre</i>
TPL Expenditure Data (2006 and 2007)	37,372	\$26,321,242	\$704.30
WRP (2007)	385.9	\$154,500	\$400.36
GRP (2006) ¹	14,314	\$1,933,362	\$135.07
Total			\$546

¹ GRP costs do not differentiate between type of easement and may include 10, 15, 20, 30 – year, or permanent easements. Also, these cost figures are for approved projects and may not be the exact amount spent.

The TPL data consists of 55 easements that were completed over the 2006- 2007 period. 2006 acquisition costs were adjusted to reflect 2007 prices. We do not break down the TPL data base into individual sources due to confidentiality reasons. However, the USFWS provided a great deal of cost information for several types of conservation easements. In addition to conservation easements, the USFWS also purchased several grassland and wetland easements. While these easements are technically different from conservation easements, we chose to include them since their purpose is to conserve natural areas. Wetland and grassland easements are less stringent than conservation easements that have strict rules against development. The Service tends to put lands threatened by urban development in conservation easements. In contrast, wetland and grassland easements are in more remote areas where the only threats are agriculture and grazing.

Easement Transaction Costs in Montana

We define transaction costs as those administrative costs incurred in the establishment of a conservation easement. These include initial site visits/pre-closure “walk through”; landowner negotiations; appraisals; project planning, coordination, and documentation; title evaluation; escrow; legal assistance: drafting and recording of the easement; and initial baseline property report¹⁴. Due to time and budget constraints, we could not conduct an in-depth analysis of every cost involved in easement establishment. As a result, we relied on readily available cost data from annual budgets, management plans, etc.

Transaction costs associated with establishing conservation easements were obtained by contacting land trusts and federal conservation programs. Similar to management costs,

¹⁴ Personal Communication. Joanne Rodriguez. Center for Natural Land Management. August, 2008.

some land trusts could not provide transaction cost data either because they did not account for them as separate from other expenditures, or because costs varied significantly from one property to another and estimating an “average” cost would therefore be misleading.

Table 4.6 shows transaction costs per project from various sources. We calculated a range of average statewide transaction cost per easement by adding up the costs provided by each organization and then dividing it by the number of organizations. We adjusted 2006 prices to 2007 dollars. We estimate that the statewide range for average transactions costs in Montana is between \$12,900 and \$14,700 per easement (Table 4.6).

Table 4.6: Transaction costs per easement in Montana (\$ 2007)

<i>Organization</i>	<i>Costs per Easement</i>	<i>Form of Data</i>	<i>Transaction Costs</i>
Gallatin Valley Land Trust ¹	\$8,055	Transaction expenses for easements in 2006 and 2007	<ul style="list-style-type: none"> - Due diligence and legal costs - Staff cost
Bitter Root Land Trust ²	\$11,000	Budget worksheet for landowners considering putting their land in easement	<ul style="list-style-type: none"> - Title search and report - Document preparation and baseline inventory - Legal counsel and recording fees - <i>Survey</i> - <i>Mineral report</i> - <i>Appraisal</i> - <i>Accounting/Financial Counsel</i>
Anonymous land trust ³	\$6,040	Example of transaction costs of a “standard” easement	<ul style="list-style-type: none"> - Resource documentation report - Title commitment - Mineral title searches - Mineral remoteness reports - Recording costs
City of Missoula ⁴	\$7,000	Standard fees that the City pays for easement transactions	<ul style="list-style-type: none"> - One-time fee (\$5,000) for every easement that goes to a fund that covers legal and other unforeseen costs. - Professional fees (\$2,000) including cost of closing, appraisal, mineral report, surveys, etc.
Vital Grounds Foundation ⁵	\$18,000 - \$25,000	Estimate of the transaction costs for establishing an easement through the organization	<ul style="list-style-type: none"> - Appraisal and baseline report - Closing costs - Legal review and recording fees - Mineral remoteness
Clark Fork-Pend Oreille Conservancy ⁶	\$19,450 - \$27,450	Estimate of the transaction costs for establishing an easement through the organization	<ul style="list-style-type: none"> - Appraisal and survey - Closing fees and baseline documentation - Title Report with special mineral search
Montana Fish, Wildlife, and Parks ⁷	\$9,365	Up front costs for easements in 2006 and 2007	<ul style="list-style-type: none"> - Appraisals / Closing / Recording - Environmental Assessments - Phase 1 Investigations
Average Transaction Cost per Easement in Montana	\$12,864 - \$14,73		

¹ Personal Communication. Kelly Pohl. Gallatin Valley Land Trust. September, 2008.

² Personal Communication. Robin Pruitt. Bitter Root Land Trust. October, 2008. Italicized activities have no associated cost provided. As a result, the transaction costs are likely an underestimate.

³ Personal Communication. Anonymous. November, 2008. Transaction costs vary depending on the easement, although this particular figure represents a “standard” easement of 1,000 acres.

⁴ Personal Communication. Jackie Corday. City of Missoula. November, 2008.

⁵ Personal Communication. Ryan Lutey. Vital Grounds Foundation. November, 2008. The Foundation has three categories of conservation easements: (1) strictly donated easements; (2) “De minimus” easements in which the trust pays all the transaction costs associated with a donated easement; (3) The landowner pays part of the actual cost of the easement. The costs listed above come from the “de minimus” category. These costs are based on land conservation projects in Montana and Idaho.

⁶ Personal Communication. Rob McCracken. Clark Fork-Pend Oreille Land Trust. November, 2008. These costs are based on land conservation projects in Montana and Idaho.

⁷ Personal Communication. James Colgrove. Montana Fish, Wildlife, and Parks. November, 2008.

Our original intent was to estimate per acre transaction costs and include these into an overall cost estimate of using easements to conserve unprotected Tier I Focus Areas. However, the majority of representatives with whom we consulted told us that there is little relationship between the acreage of an easement and associated transaction costs associated with acquiring an easement. Organizations that provided us with data provided an average cost or range of costs *per project*. While several factors do influence transactions costs (relationships with the landowner, permitted rights, distance of property from office, how extensive the baseline survey is, etc.) overall costs tend to be within the same range for each project within an organization. Thus, because of the difficulty in estimating per acre transactions costs, the costs reported in Table 4.6 are not incorporated into our overall estimate of the costs of conserving unprotected Tier 1 Focus Areas via the easement strategy (Table 4.8). However, it should be noted that easement transactions costs can be substantial and should be accounted for when considering this land conservation strategy. For example, one issue with conservation easements in Montana is that private landowners frequently bear the burden of incurring most transactions costs, particularly when a small land trust is leading the transaction. These upfront costs can be very prohibitive and prevent many landowners from putting their land into a conservation easement.

Two other types of easement-related costs to consider are a stewardship endowment and enforcement costs. According to land conservationists in Montana, having adequate funds for a stewardship endowment is frequently the deciding factor for establishing a conservation easement. A stewardship endowment is necessary to insure that the land being put in easement will be managed properly in the future. Many land conservation organizations will not consider holding an easement if there is not a proper endowment. Enforcement costs are incurred when a dispute or violation over easement terms arise. According to the Land Trust Alliance a land conservation organization should set aside a minimum of \$50,000 for a legal defense fund to effectively enforce fifteen easements. An additional \$1,500 to \$3,000 is needed for every additional easement (Doscher, 2007). While our analysis does not consider stewardship endowments or enforcement costs, these are significant to the overall financial viability of conservation easements.

Cost of Rental/Lease Agreements

Estimates of land rental/lease rates in Montana come from two sources: (1) data compiled by the National Agricultural Statistics Service for private commercial rental rates involving cropland and pastureland (2007); and (2) data from the USDA conservation programs, specifically the Conservation Reserve and Grassland Reserve Programs.

Table 4.7: Rental/lease rates in Montana

Data Source	Cost per Acre (\$ 2007)
Private Cropland	\$28.50
Private Pastureland	\$6.50
Conservation Reserve Program (General Sign-up) ¹	\$33.27
Grassland Reserve Program ²	\$6.61
Total	\$18.72

¹ Farm Service Agency. *Conservation Reserve Program: Summary and Enrollment FY 2007*. Table: CRP Enrollment by State, FY 2007, Cumulative General Sign-Up. Page 14.

² Personal Communication. Jean Agapoff. Farm Service Agency. October, 2008. Data is the average rental rate from 2005-2007. Due to disclosure issues, costs could not be broken down by year.

Comprehensive data on the actual land cover types that were rented under each of these categories is not available. As a result, a weighted average statewide rental rate based on land cover type could not be estimated. In addition, this data represents the rental rates for only a small portion of the land cover types in Montana. Because the rental data in these categories tend to be on agricultural lands, it does not, for the most part, include land cover types such as forestlands, wetlands, etc. As a result, the rental rates may be biased toward the cost of renting agricultural lands and not other land cover types. We estimated an average rental/lease rate at about \$19.00/acre.

B. Estimated State Wide Costs for Conserving Un-protected Tier 1 Focus Areas in Montana

Table 4.8 summarizes the estimated per acre and total costs for conserving currently unprotected Tier 1 Focus Areas in Montana. The figures in the second column represent the estimated cost for these lands if they were all purchased, had an easement, or were rented *in one year*. The figures in the third column represent the estimated cost of protecting these lands over a 30-year period. For the 30-year costs, we assumed that the total acreage to be protected would be divided into 30 equal annual increments. With the exception of the base year, we also assumed a 3% annual increase in land costs and that all protection strategies were equally viable in all parts of the state. All cost data from years other than 2007 were adjusted for inflation using rates provided by the Council of Economic Advisers (2009). Cost data from 2008 was adjusted with a provisional inflation rate of 2.1%.

Table 4.8: Per acre and total costs per protection strategy in Montana (\$ 2007)

<i>Protection Strategy</i>	<i>Cost per Acre</i>	<i>Total One-Time Costs (Million \$)</i>	<i>Total 30-Year Costs (Million \$)</i>
Fee-Simple Purchase	\$2,562	\$160,445	\$254,441
Management Costs	\$4.97	\$311	\$8,727
Purchase + Management Costs	\$2,567	\$160,756	\$263,168
Conservation Easement	\$546	\$34,166	\$54,182
Rental Agreements	\$18.72	\$1,172	\$32,881

The estimated 30-year cost for protecting all currently un-protected Tier 1 Focus Areas through fee-simple acquisitions (including management costs) is the most expensive option at approximately \$263 billion. Conservation easements would cost about 54.2 billion and rental agreements 32.9 billion over 30 years. However, rental costs would continue to be incurred after the 30-year time period. In contrast, land protected through fee-simple purchases and perpetual conservation easements require no further payments, with the exception of the cost of managing the land. The least cost option would be to pay landowners to manage for biodiversity values. Management costs, over a 30-year period would be approximately \$8.7 billion.

While the total 30-year costs appear high for each type of conservation strategy, it should be remembered that we are dealing with an extremely large area that has been designated as the Tier 1 Focus Areas. By setting more limited Tier 1 geographical habitat priorities, costs of protection across all strategies will decrease accordingly.

V. Policy Recommendations

Based on our analysis of Montana's spending and spatial data as well as the state's policy environment we offer the following recommendations. Each is intended to help the state direct more funding towards protecting high priority habitat. These recommendations are directional, rather than specific, because this study was not focused on analyzing the state's approach to implementing its Conservation Strategy.

Montana made a significant investment in the creation of its Conservation Strategy and continues to invest in its implementation. It is early in the implementation process. There is a lot of data that is not readily available to demonstrate fully the degree of alignment between total spending on land conservation land the Tier 1 Focus Areas. Nevertheless, we believe there are opportunities for the state to do more to guide spending towards protecting the areas it considers the most important habitat areas. We offer these policy recommendations, focused on all sources of funding available to the state of Montana for land conservation, to help Montana yield greater alignment in the future.

Our first recommendation is that Montana assign responsibility to an organization for tracking all public and private land conservation programs in the state to understand what types of lands are being protected and how the protected lands align with the Tier 1 Focus Areas. This would enable FWP to identify opportunities to guide future investment towards high priority areas. Finding *historic* data on each acquisition (spending, acres acquired, and the spatial characteristics) has proved quite difficult, however picking up where this project leaves off will be much easier. Gathering and reporting *current* data would not need to be as onerous as gathering data on past projects, particularly if clear definitions and guidance were provided to each organization. FWP might consider establishing guidelines to standardize reporting on all land protected within the state as a means of measuring progress towards Conservation Strategy goals. Because much of the land conserved is protected with easements, and data collection on easements is being standardized, creating appropriate mechanisms may not require too much effort. The Conservation Registry, currently managed by the Northwest office of Defenders of Wildlife, would be the ideal mechanism for tracking and mapping land conservation activity in the state.

Second, the state could increase its effort to protect land in the Tier 1 Focus Areas by increasing funding available to the state for investing in those areas and by increasing the alignment of land acquired with funds the state uses. FWP, and possibly other state agencies, could pursue federal grants more aggressively. This could include leveraging grant-writing skills in some of the land trusts and other private conservation organizations. It also might involve looking at federal sources used by other states that haven't been used as frequently in Montana (such as the National Scenic Byways Program and the Recreational Trails Fund) to see if there might be an opportunity to bring in new funding sources.

Third, the state could develop approaches to influence land selection by non-state programs, emphasizing programs with the highest spending levels. Since state programs only provide about one-quarter of the funds used to protect land in Montana, this will help the state achieve its conservation goals using other entities' funds. Most of the funding for land acquisition in Montana comes from funding programs that state agencies do not control,

which creates a challenge. But, this also creates an opportunity to find ways to encourage these other funding sources to direct resources to the Tier 1 Focus Areas. Between 1998 and 2007, the federal government helped fund 60% of Montana's land conservation expenditures, and nearly two-thirds of federal expenditures is spent to acquire land for federal land management agencies, such as U.S. Fish and Wildlife Service. To the extent that the state can influence these federal agencies to acquire land in the Tier 1 Focus Areas, Montana will move towards its conservation goals more quickly.

Fourth, Montana could consider ways to encourage protection of priority habitats by land trusts and local government programs with open space bond money by informing them of any Tier 1 Focus Area conservation opportunities in their service areas. Montana has not had the level of activity that many states have in terms of citizens putting conservation initiatives on the ballot, so it would not take a lot of effort to track future activity to watch for initiatives coming from areas with high priority lands. On a more proactive basis, FWP may want to ensure that its field staff members who understand the state's Conservation Strategy stay involved in early discussions about targeting land for acquisition at the local government level.

Fifth, the state also has opportunities to influence individuals and/or organizations (including tribal governments) that apply for federal funds through programs that are not coordinated through state agencies, such as NRCS funds, BPA grants, and NAWCA grants. Approaches will need to be tailored for different entities, or possibly for different regions of the state, but the key will be to ensure that they understand what types of habitat the state has identified in their Conservation Strategy as being of highest priority.

Sixth, the data contained in this report can act as a baseline of conservation activity in the state, but information gaps need to be filled. Expenditure and acreage data still need to be collected and spatially mapped, from some major federal agencies, local governments, and some land trusts. Land conservation expenditure and acreage data for the years 2008 and 2009 needs to be added to the baseline.

Lastly, the statewide cost analysis presented in this study concerning future payment levels for conserving those Tier 1 Focus Areas that are not yet protected will need two future adjustments, both of which would drive down overall cost estimates. First, the costs for Tier 1 Focus Areas conserved in 2008 and 2009 will have to be deducted from the overall total amount established in this baseline. Second, prices will have to be adjusted to 2008 or current dollar levels, which will be lower than the inflation-adjusted 2007 prices used in this report. We do not expect that the relative prices between the various protection strategies will change, meaning that to pay landowners to manage for biodiversity/habitat conservation values would remain a viable option for the state to consider in the implementation of its State Strategy.

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Montana Department of Natural Resources and Conservation

<http://www.dnrc.mt.gov/>

Montana Department of Administration, Land Information Act (working with federal, state, local, private, and tribal entities to develop and maintain land information)

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VII. Organizational Contacts

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James Colgrove, Montana Fish, Wildlife, and Parks

Jean Agapoff, Farm Service Agency