

Flathead River to Lake Initiative **Analysis of Conservation Success**

Flathead River, Montana



Flathead Land Trust (FLT) and American Bird Conservancy (ABC)
Prepared for the *Flathead River to Lake Initiative*
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Executive Summary

The *Flathead River to Lake Initiative* is a collaborative effort to conserve and restore our Flathead River and Lake natural heritage. The *Flathead River to Lake Initiative* involves private landowners, land trusts, conservation organizations, and county, tribal, state and federal agencies working together to conserve critical lands along the lower Flathead River and north shore of Flathead Lake. Goals of the *Flathead River to Lake Initiative* include maintaining and improving water quality, protecting natural floodplain functions, protecting and enhancing critical fish and wildlife habitat, conserving prime farmlands, and maintaining traditional rural and scenic character.

This report is a first step in assessing the *Flathead River to Lake Initiative's* accomplishments protecting critical lands within the 100-year floodplain of the Flathead River from just upstream of Columbia Falls to Flathead Lake as well as the north shore of Flathead Lake (the *Initiative's* focus area).

Critical lands are areas such as wetlands, floodplain, riparian areas, and associated uplands, including prime farm lands, that help keep our streams, rivers and lakes clean and sustain important fish and wildlife habitat, recreation, and scenery, all contributing to the special quality of life for which the Flathead is known.

The analysis of conservation in the focus area shows that:

- 41% of the 100-year floodplain of the Flathead River in the focus area is protected
- 29% of the main channel of the Flathead River in the focus area is protected
- 43% of the shallow groundwater in the focus area is protected
- 51% of the wetlands in the focus area are protected
- 27% of the slough buffers are protected
- 49% of the quality riparian area in the focus area is protected
- 34% of the important agricultural soils in the focus area are protected
- 57% of the protection is due to private land conservation
- 45% of the protection is due to the *Flathead River to Lake Initiative*

Over the past 10 years, the *Flathead River to Lake Initiative* partners have conserved nearly 5,000 acres of critical lands in the *Flathead River to Lake Initiative* focus area adding to a network totaling nearly 11,000 acres of protected private and public lands.

Introduction

Flathead River to Lake Initiative

The *Flathead River to Lake Initiative* brings together private landowners, land trusts, conservation organizations, and county, tribal, state, and federal agencies to conserve and restore our Flathead River and Lake natural heritage – excellent water

quality, abundant fish and wildlife, outstanding recreation and scenic values, and prime farm land.

The *Flathead River to Lake Initiative* focus area encompasses the 100-year floodplain of the Flathead River from its confluence with the South Fork Flathead River to Flathead Lake and the north shore of Flathead Lake. The importance of this area for water quality, fish and wildlife habitat, and other natural resources and the imminent threats to these resources brought together a group of interested partners. The group of partners defined and identified critical areas needed to maintain the water quality and fish and wildlife of the area and summarized their findings in the “Critical Lands Status Report: The North Flathead Valley and the Flathead River System (2002).” The report identified sloughs and wetlands associated with the river, riparian corridors, floodplains, shallow groundwater areas, prime agricultural soils and farm land, and undeveloped lakeshore as the primary focus for conservation and restoration.

The conservation needs identified brought about the *Flathead River to Lake Initiative*. In the past ten years, the *Flathead River to Lake Initiative* has protected almost 5,000 acres of key lands in its focus area adding to a conservation network totaling almost 11,000 acres of private and public lands. An additional 650 acres in close proximity to the focus area that protect significant wetlands are also protected.

Flathead River to Lake Initiative Goals

Goals of the *Flathead River to Lake Initiative* include:

- maintaining and improving water quality,
- protecting natural floodplain functions,
- protecting and enhancing critical fish and wildlife habitat,
- conserving prime farmlands,
- maintaining the traditional rural and scenic character.

Growth pressures and development can lead to the loss of riparian habitat, prime farm land, and other natural resources. By working together, *Flathead River to Lake Initiative* partners seek to conserve what is special about the Flathead Valley while accommodating growth.

The Flathead River Watershed

The Flathead River is the lifeblood of the Crown of the Continent Ecosystem, the largest intact ecosystem within the lower 48 states. The Crown includes Glacier National Park and the greater Bob Marshall Wilderness complex consisting of nearly 10 million acres. The Crown of the Continent contains all the native fish and wildlife species found when the area was first explored by Canadian fur traders in the early 1800s.

On the western edge of the Crown lies the Flathead River basin in northwest Montana and southeastern British Columbia. The Flathead River’s waters, wetlands and

riparian systems are the most threatened areas in this unique landscape and the most vital for maintaining clean water and providing habitat for an amazing diversity of native fish and wildlife species.

The Flathead River flows from its headwaters in Glacier National Park, the Bob Marshall Wilderness, and Canada into Flathead Lake, the largest freshwater lake west of the Mississippi River, and one of the 300 largest lakes in the world. All together, the Flathead watershed drains six million acres and includes a large assemblage and diversity of wetlands and river systems.

The streams and rivers in the Flathead River watershed have excellent water quality. The watershed provides habitat for many species of fish and wildlife. The Flathead River from just upstream of Columbia Falls and Flathead Lake as well as the north shore of Flathead Lake provides important feeding, resting, and breeding areas for many species of waterfowl and other birds. Bald eagles also nest along this stretch of river and this area is believed to have one of the highest densities of osprey nests in Montana. Bull trout, a federally threatened species, and westslope cutthroat trout, a state species of special concern also use this stretch of river as migratory and overwintering habitat. Even grizzly bear listed as endangered under the Federal Endangered Species Act uses the riparian and wetland habitats in this portion of the Flathead River.

Many of the soils along the Flathead River have been identified by the U.S. Department of Agriculture Natural Resource Conservation Service as some of the best farming soils in Montana.

Natural Resource Concerns

The Flathead River originates in wilderness, national park, and national forest lands; however, between the confluence of the South Fork Flathead River and Flathead Lake most of the watershed is in private ownership. Threats to this portion of the Flathead River include development of the riparian area and land traditionally used for agriculture in the floodplain. In addition, much of the area in this lower reach has a shallow depth to the water table (much is less than 8 feet) and there is significant movement between this shallow alluvial aquifer and the river (Noble and Stanford 1986). Thus, pollution entering the shallow alluvial aquifer can move quite quickly into the Flathead River. This shallow groundwater increases the threat to water quality from land use and changes taking place on the private lands in this reach can have a lasting impact on the health and water quality of Flathead Lake.

Flathead River to Lake Initiative Partnership

The *Flathead River to Lake Initiative* partners provide conservation and restoration information, expertise, and financial options to private landowners along the Flathead River and north shore of Flathead Lake. *Flathead River to Lake Initiative* partners work directly with landowners to craft conservation projects that meet individual

needs. By working together, numerous organizations, agencies, and landowners have developed successful conservation projects.

The *Flathead River to Lake Initiative* partnership has grown to include landowners, land trusts (Flathead Land Trust, Montana Land Reliance), non-governmental organizations (Flathead Lakers, American Bird Conservancy, Flathead Audubon Society), the Confederated Salish and Kootenai Tribes, government agencies (Flathead County River Commission, Montana Fish, Wildlife and Parks, Natural Resource Conservation Service (NRCS), U.S. Fish and Wildlife Service (USFWS)). The *Flathead River to Lake Initiative* has sharpened both the focus of and ability to raise substantial public funds for private land conservation. The collaboration of the *Flathead River to Lake Initiative* has enabled the group to receive grants from entities such as the NRCS Farm and Ranchland Protection Program (FRPP), the USFWS Bird Conservation Programs (North American Wetland Conservation Act (NAWCA)), state/tribal Bonneville Power Administration (BPA) Resident Fisheries program, Intermountain West Joint Venture, Montana Department of Environmental Quality and the Environmental Protection Agency. Multiple partners build the collaborative effort's capacity to plan and implement complex conservation projects, enhance and restore wetlands and riparian areas, and secure significant funding for projects. The *Flathead River to Lake Initiative* has grown into a landscape-scale private land conservation partnership with a mission to protect water quality, critical habitats, and productive farm lands of the lower 43 miles of the Flathead River and 7 miles of the north shore of Flathead Lake (Figure 1).

Over the past 10 years, the *Flathead River to Lake Initiative* partners have conserved nearly 5,000 acres of critical lands in the *Flathead River to Lake Initiative* focus area involving over 20 landowners adding to a network totaling nearly 11,000 acres of protected private and public lands. This report analyzes the success of the *Flathead River to Lake Initiative* in protecting critical lands in its focus area.

Methods

Focus Area

The area analyzed includes 43.5 miles of the Flathead River main channel and its associated 100-year floodplain from the confluence of the South Fork Flathead River to Flathead Lake as well as 7 miles of the north shore of Flathead Lake extending from the town of Bigfork to Somers and its associated 100-year floodplain (23,224 acres or 36.3 square miles). The area analyzed also included other lands outside the 100-year floodplain on the north shore of Flathead Lake south of Hwy. 82 (1,739 acres or 2.7 square miles). In addition, it included a quarter mile buffer of Flathead River sloughs and important wetlands (593 acres or 0.9 square miles) that were outside the 100-year floodplain.

Protected parcels included private land with conservation easements in place and public

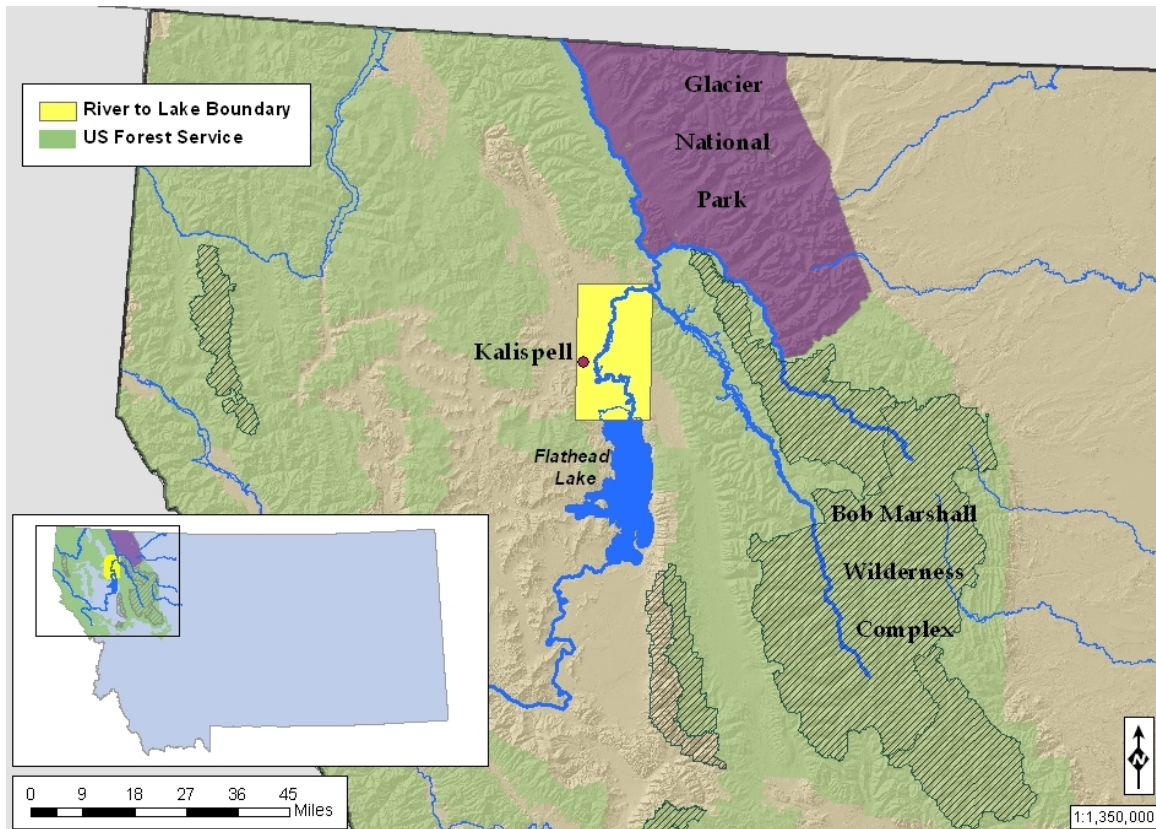


Figure 1. Locator map of *Flathead River to Lake Initiative* project area which includes the lower 43 miles of the Flathead River and 7 miles of the north shore of Flathead Lake.

land owned by government agencies. *Flathead River to Lake Initiative* successes were defined as conservation projects completed by the partners beginning in 2002.

Flathead River to Lake Initiative partners completed conservation projects on additional acres outside the focus area, but these additional acres were excluded from this analysis.

Defining Parcel Boundaries

To determine parcel boundaries for the analysis, we grouped adjacent parcels owned by a family, even when they included numerous individual family members. Parcels needed to meet the following criteria to be included in the analysis:

- overlap at least one acre of the 100-year floodplain OR
- be located on the north shore of Flathead Lake south of Hwy. 82 between the towns of Bigfork and Somers OR
- overlap at least one acre of a quarter mile buffer of a slough or important wetland along the Flathead River

We used parcels as displayed in the Montana Cadastral data. The Montana Cadastral Framework is built primarily upon the measurement based cadastral reference of the Geographic Coordinate Database maintained by the Bureau of Land Management, with tax parcels as defined by the Department of Revenue. The Flathead River was identified as unknown ownership in the Montana Cadastral data. Because the river channel was mapped so long ago, some places identified as river in the Montana Cadastral data are now land. The river as well as these areas of unknown ownership along the river or on islands of the river was excluded from the analysis (3,626 acres of the 100-year floodplain in the analysis area).

Conservation Success Metrics

Conservation success was measured using nine metrics:

- parcel size
- acres of 100-year floodplain
- miles bordering the Flathead River
- acres of shallow groundwater
- acres of wetland
- acres within a quarter mile buffer of a Flathead River slough or important wetland
- miles bordering the slough or important wetland
- acres of riparian habitat that is forested or contained shrubs
- acres of important agricultural soils

100-year Floodplain Protected

We intersected the Federal Emergency Management Agency (FEMA) floodplain data with the protected parcels used in the analysis to determine the acres of 100-year floodplain each protected parcel contained.

Flathead River and Lake Miles Protected

The length of main channel of the Flathead River that bordered the protected parcels was measured using the channel identified by the U.S. Geological Survey (USGS) river mile data. Because the river channel was mapped so long ago and some places identified as river in the Montana Cadastral data are now land, some areas bordering the river are of unknown ownership and were excluded from the analysis (4.3 miles). Thus, the length of river used for the analysis was 82.7 miles (including both sides of the river). We also measured the length of the shoreline of Flathead Lake bordering the protected parcels. We used the measuring tool in ArcMap at a 1:8,000 scale and the 2009 National

Agriculture Imagery Program (NAIP) aerial photos when measuring the length of channel that bordered the protected parcels.

Shallow Groundwater Protected

We used the 2009 shallow groundwater map and data developed by the University of Montana Flathead Lake Biological Station. These maps were created using well data downloaded from the Ground-Water Information Center (GWIC) at the Montana Bureau of Mines and Geology. Shallow groundwater was defined as a depth to the water table of less than 15 feet. We intersected the shallow groundwater data with the protected parcels used in the analysis to determine the acres of shallow groundwater each protected parcel contained.

Wetlands Protected

We intersected the 2010 National Wetland Inventory wetland data with the protected parcels used in the analysis to determine acres of wetland each protected parcel contained. We calculated both total wetland acres, and acres of palustrine wetland (excluding riverine and palustrine types) for each protected parcel.

Flathead River Sloughs and Important Wetlands Protected

We created a quarter mile buffer of Flathead River sloughs and important wetlands. We then intersected the quarter mile buffer with the protected parcels used in the analysis. This allowed us to determine the number of acres each protected parcel contained that was within a quarter mile of the sloughs or important wetlands. The Flathead River sloughs and important wetlands we identified included Fennon, Church, Egan, Half Moon, Weaver, and McWenneger sloughs, and Brosten Pond.

We also measured the length of the sloughs or important wetlands that bordered the protected parcels. We used the measuring tool in ArcMap at a 1:8,000 scale and the 2009 NAIP aerial photos when measuring these lengths.

Quality Riparian Area Protected

We used data from the American Bird Conservancy to determine the area that included riparian forests or shrubs in each protected parcel. The area that was forested or contained shrubs was estimated from 2006 aerial photos analyzed by the American Bird Conservancy. We intersected the area that was forested or contained shrubs in the 100-year floodplain with the protected parcels used in the analysis to determine acres of riparian area that included forests or shrubs in each protected parcel.

Important Agricultural Soils Protected

We intersected important agricultural soils with the protected parcels used in the analysis to determine the acres of important agricultural soils each protected parcel contained. Important agricultural soils were defined as prime farmland, prime farmland if irrigated, and farmland of statewide importance as determined by the U.S. Department of Agriculture, Natural Resource Conservation Service.

Acres Protected by River Neighborhood

The focus area was divided into four river neighborhoods: the upper, braided, lower, and north shore.

- The “upper” river neighborhood includes the parcels between the confluence of the South Fork Flathead River and the Highway 35 crossing of the Flathead River.
- The “braided” neighborhood includes the parcels between the Highway 35 crossing of the Flathead River and just upstream of Foy’s Bend where the braided channel begins.
- The “lower” neighborhood includes the parcels from just upstream of Foy’s Bend where the single channel begins to the Highway 82 crossing of the Flathead River.
- The “north shore” neighborhood includes the parcels south of Highway 82 on the north shore of Flathead Lake between the towns of Bigfork and Somers.

Results

Total Land Conservation

The focus area includes 179 parcels greater than 40 acres in size (31,435 acres), 44 of which have conservation in place (10,576 acres). It also includes 14 properties with conservation in place that are less than 40 acres in size (totaling 332 acres). Thus, the parcels in the focus area encompass about 50 square miles (31,767 acres). Thirty-four percent (10,908 acres) of the focus area is protected by private land conservation projects and public lands (Figure 2).

Although much of the land protection in the focus area was historically through government agencies, 6,193 acres (57%) of the land protection can be attributed to private land conservation and 4,951 acres (45%) to the success of the *Flathead River to Lake Initiative* (R2L)(Table 1).

Most of the lands protected are in the “braided” and “north shore” Flathead River neighborhoods (Figure 2). However, *Flathead River to Lake Initiative* projects account for most of the conserved lands in the “upper” and “lower” neighborhoods (Table 2).

Table 1. Ownership of land protected in focus area and the percent of the protected acres which can be attributed to the *Flathead River to Lake Initiative* (R2L) success.

| Landowner or Conservation Easement Holder | Acres in Conservation Easement (Private Ownership) | Acres of Public Land | % R2L Initiative Success |
|---|--|-------------------------|--------------------------------|
| City of Columbia Falls | | 28 | 0% |
| Flathead County | | 205 | 0% |
| Department of Natural Resources and Conservation | | 606 | 0% |
| Montana Department of Transportation | | 239 | 0% |
| Montana Fish, Wildlife and Parks | | 1,110 | 45% |
| State of Montana | | 136 | 0% |
| U.S. Fish and Wildlife Service | | 1,887 | 0% |
| U.S. Forest Service | | 365 | 0% |
| Confederated Salish and Kootenai Tribes | | 141 | 100% |
| Flathead Land Trust | 3,775 | | 93% |
| Montana Land Reliance | 1,716 | | 48% |
| The Nature Conservancy | 671 | | 0% |
| Open Space for Subdivision | 31 | | 0% |
| TOTAL | 6,193 | 4,717 | 45% |

Table 2. Acres protected by neighborhood and percent of the protected acres which can be attributed to the *Flathead River to Lake Initiative* (R2L) success.

| Neighborhood | Acres Protected | % R2L Initiative Success |
|--------------|-----------------|--------------------------|
| North Shore | 2,178 | 11% |
| Lower | 4,132 | 69% |
| Braided | 2,014 | 30% |
| Upper | 2,584 | 50% |
| TOTAL | 10,908 | 45% |

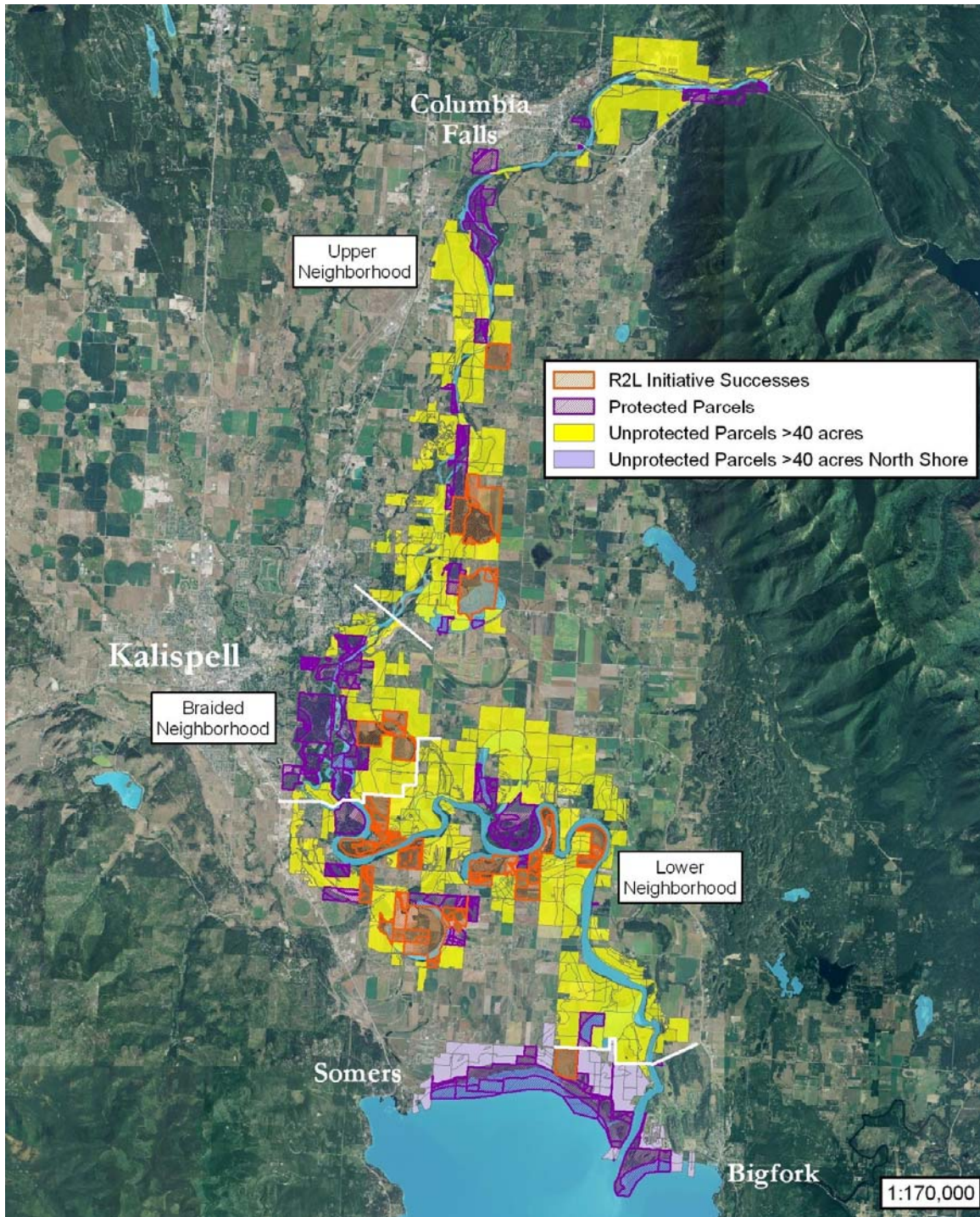


Figure 2. Focus area of the analysis including parcels greater than 40 acres in size that either overlapped at least one acre of the 100-year floodplain, were located on the north shore of Flathead Lake south of Hwy. 82 between Somers and Bigfork, or overlapped at least one acre of the quarter mile buffer of Flathead River sloughs or important wetlands; and protected properties less than 40 acres in size meeting these criteria.

100-year Floodplain Protected

Forty-one percent (8,106 acres) of the 100-year floodplain in the focus area has been protected. Much of this protection (41% or 3,348 acres) can be attributed to the success of the *Flathead River to Lake Initiative* (Figure 3).

Flathead River Miles Protected

Over 24 miles (29%) of the Flathead River main channel are protected, over 9 miles (38%) of which can be attributed to the success of the *Flathead River to Lake Initiative*. Much of the protection of the main channel in the “lower” neighborhood can be attributed to the *Flathead River to Lake Initiative* (Table 3; Figure 4).

Table 3. Miles of Flathead River main channel protected in focus area and percent of the protected miles which can be attributed to the *Flathead River to Lake Initiative* (R2L) success.

| Neighborhood | Total Miles Flathead River Main Channel (both sides) | Miles Protected | % Protected | % R2L Initiative Success |
|--|--|--------------------|-------------|--------------------------------|
| North Shore | 5 | 2.1 | 42% | 0% |
| Lower | 33.7 | 10.4 | 31% | 85% |
| Braided | 8 | 4.3 | 54% | 9% |
| Upper | 36 | 7.6 | 21% | 1% |
| Historic River with Unknown Ownership | 4.3 | | | |
| TOTAL | 87 | 24.4 | 29% | 38% |

Shallow Groundwater Protected

The focus area contains 11,498 acres of lands overlying shallow groundwater, 43% of which have been protected and 38% of that protection has occurred due to the success of the *Flathead River to Lake Initiative*. Most of the acres of shallow groundwater in the focus area have a depth to the water table of less than 8 feet (10,772 acres) and 42% of lands overlying this groundwater are protected. Again 37% of this protection can be attributed to the *Flathead River to Lake Initiative* (Figure 5).

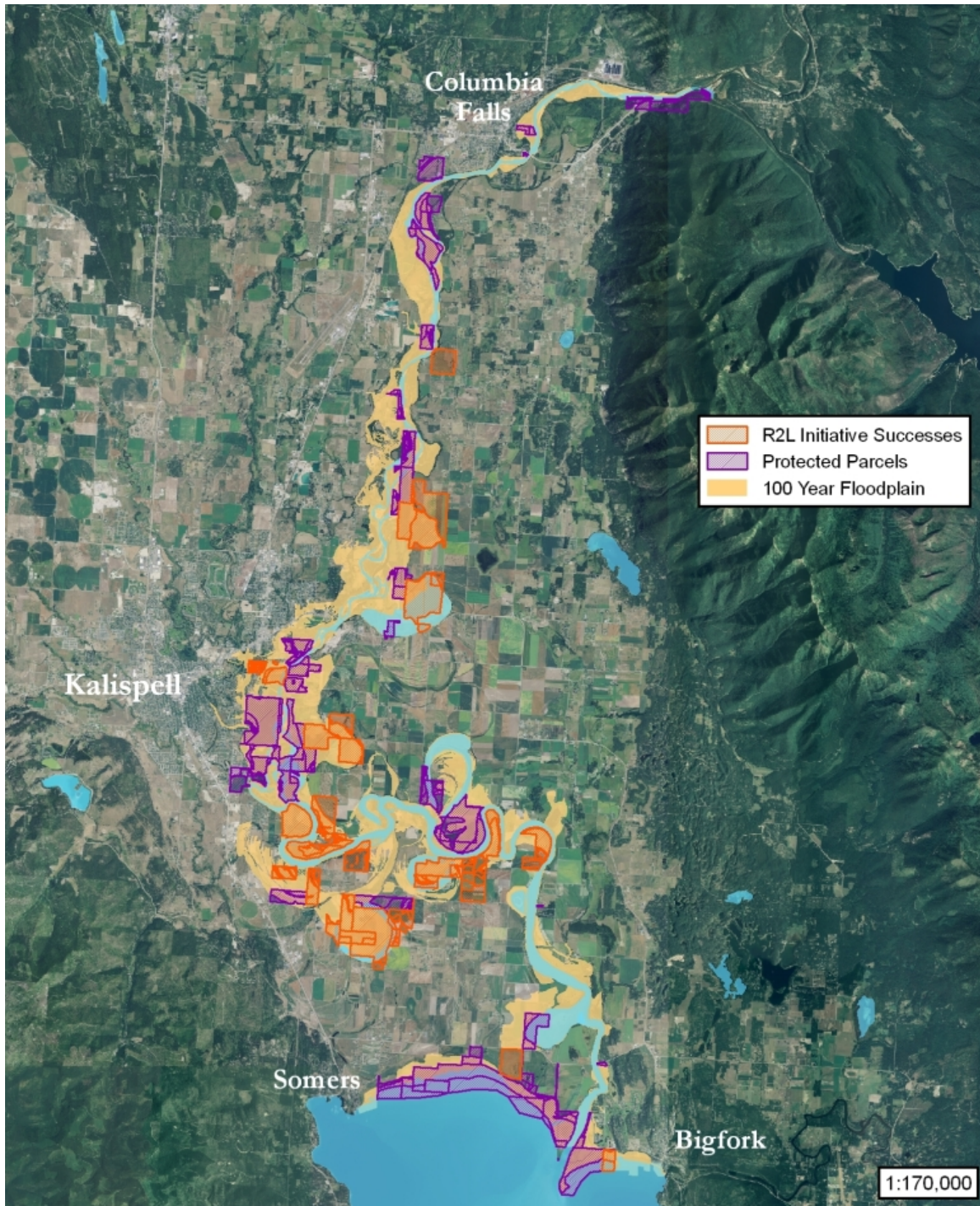


Figure 3. Flathead River and north shore of Flathead Lake 100-year floodplain protected in focus area.

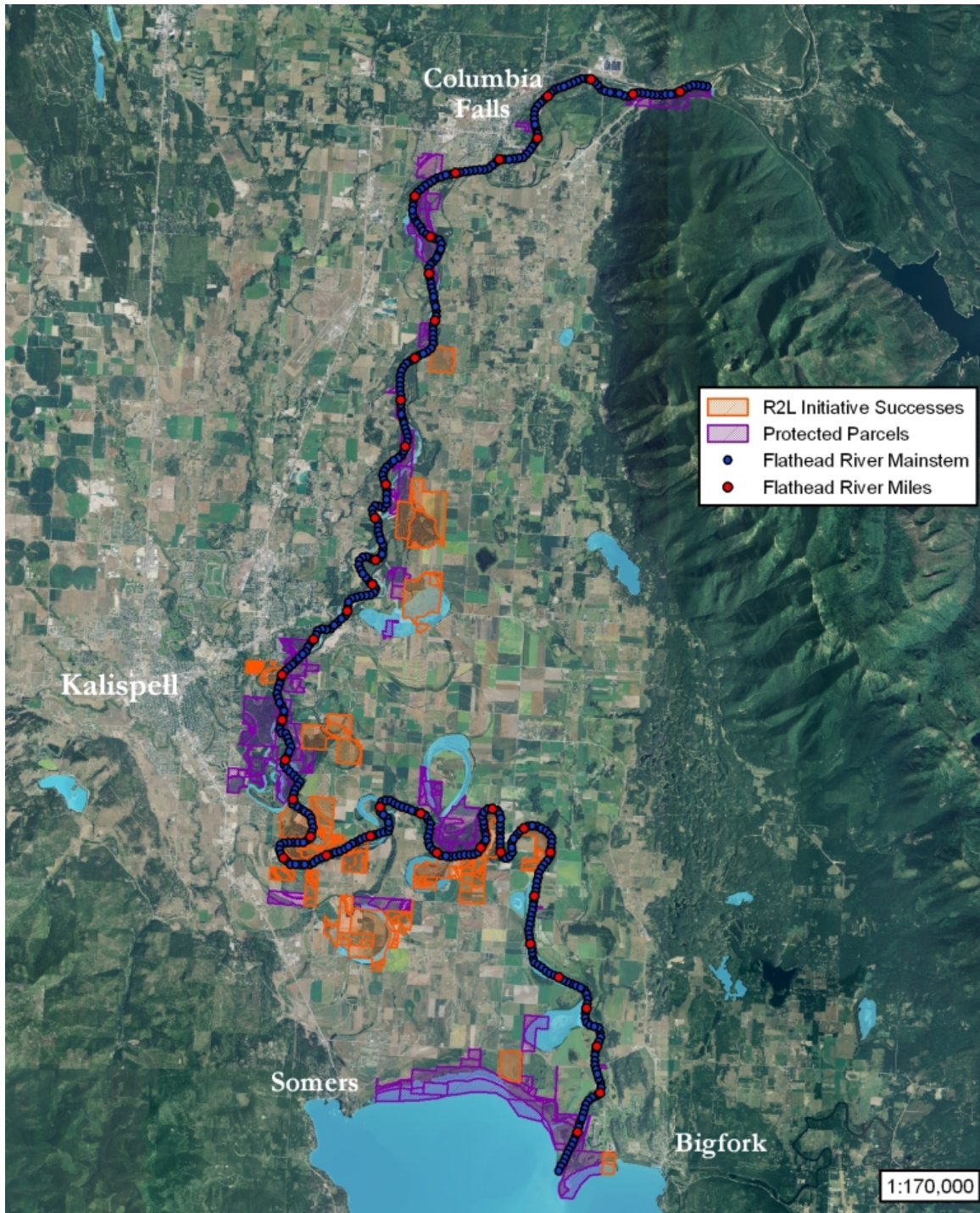


Figure 4. Flathead River main channel protected in focus area.

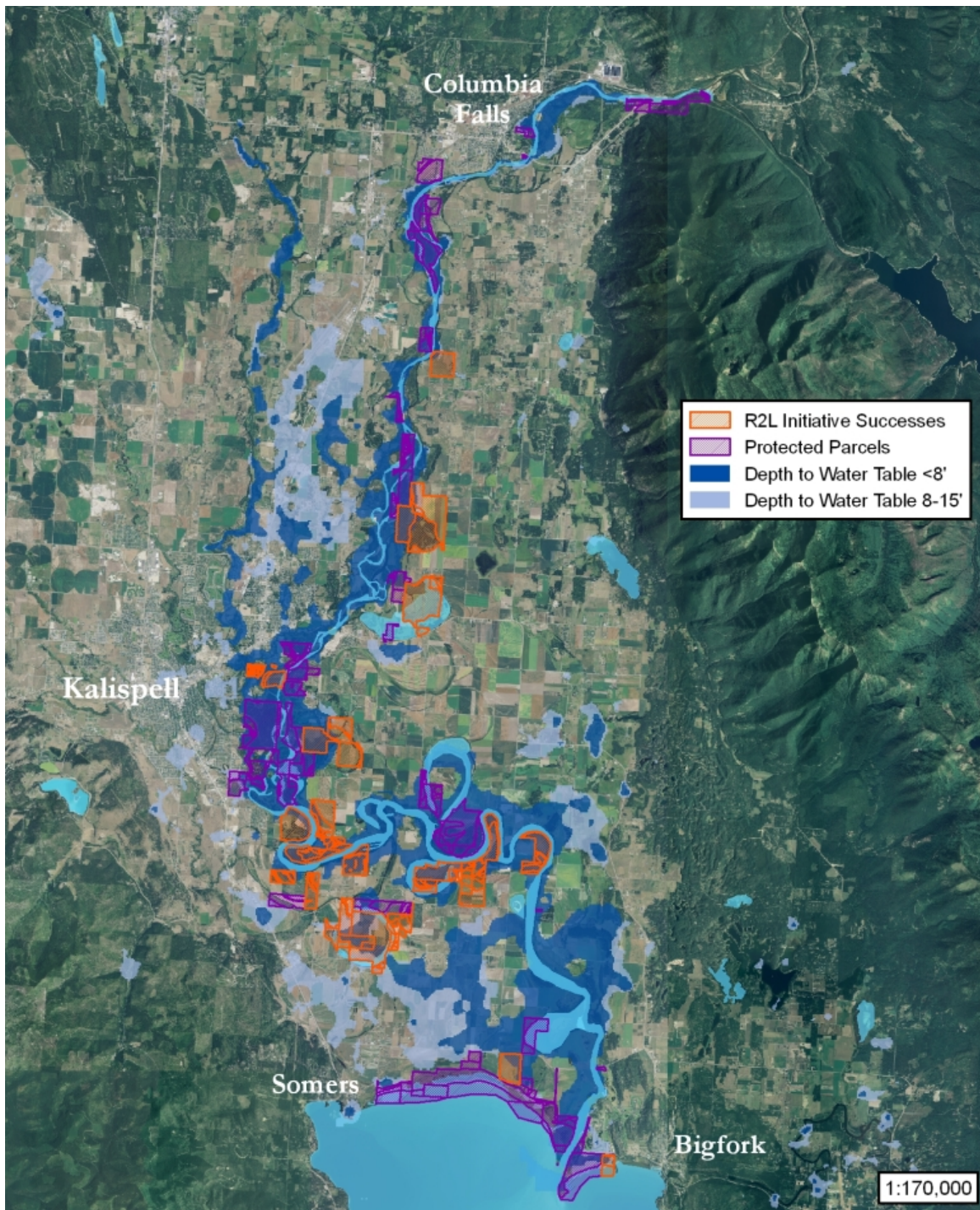


Figure 5. Shallow groundwater protected in focus area.

Wetlands Protected

The focus area contains 6,811 total acres of wetlands of which 51% are protected and 25% can be attributed to the success of the *Flathead River to Lake Initiative* (Figure 6). Forty-two percent of the wetlands in the focus area are the palustrine type or other high quality wetland, 50% of which have been protected and 35% were protected by the *Flathead River to Lake Initiative*.

Flathead River Sloughs and Important Wetlands Protected

There are 7,803 acres within a quarter mile buffer of the Flathead River sloughs and important wetlands of which 2,071 acres (27%) are protected and 1,367 acres (66%) were protected by the *Flathead River to Lake Initiative* (Table 4)(Figure 7). Weaver Slough is most protected primarily because of the work of the *Flathead River to Lake Initiative*. The other sloughs most protected, Church and McWeneger, have also benefited primarily from the *Flathead River to Lake Initiative*.

Table 4. Flathead River slough and important wetland buffers protected and percent of protected acres which were protected by the *Flathead River to Lake Initiative*.

| Slough | Acres ¼ Mile Slough Buffer | Acres Protected | % Protected | % R2L Initiative Success |
|--------------|-------------------------------|-----------------|-------------|--------------------------------|
| Fennon | 1,225 | 159 | 13% | 0% |
| Egan | 1,646 | 310 | 19% | 0% |
| Church | 955 | 300 | 31% | 95% |
| Half Moon | 561 | 2 | 0% | |
| Weaver | 1,304 | 865 | 66% | 80% |
| McWeneger | 1,689 | 475 | 28% | 88% |
| Brosten Pond | 423 | 0 | 0% | |
| TOTAL | 7,803 | 2,111 | 27% | 66% |

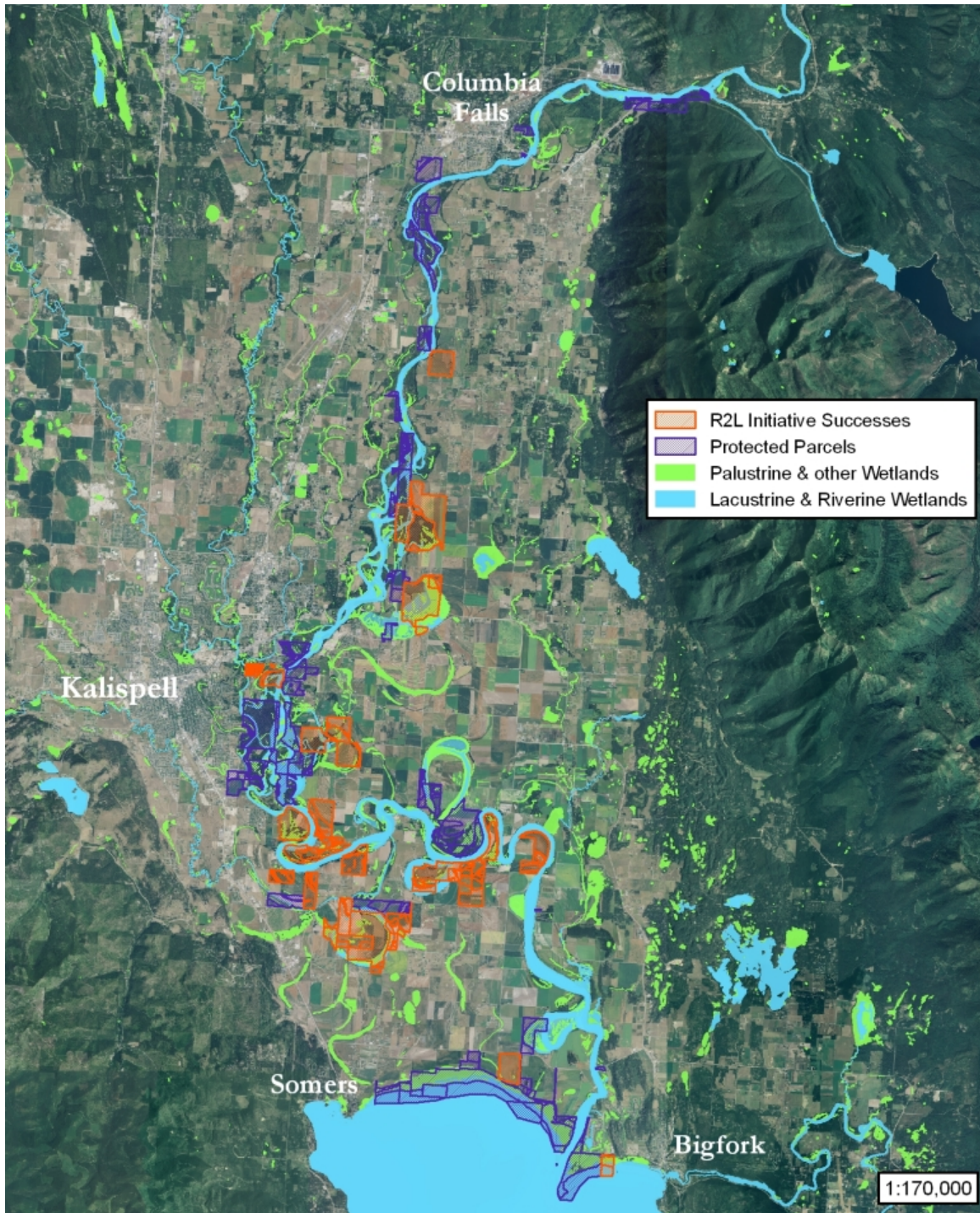


Figure 6. Wetlands protected in focus area.

Thirty-five percent of land bordering the sloughs and important wetlands are protected of which 54% can be attributed to the success of the *Flathead River to Lake Initiative* (Table 5)(Figure 7). Properties bordering Weaver, McWeneger and Church sloughs are the most protected and all largely due to the efforts of the *Flathead River to Lake Initiative*.

Table 5. Miles of Flathead River sloughs and important wetlands protected and percent of protected acres which can be attributed to the success of the *Flathead River to Lake Initiative*.

| Slough | Total Miles (both sides of slough) | Miles Slough Protected | % Protected | % R2L Initiative Success |
|--------------|--|---------------------------|-------------|--------------------------------|
| Fennon | 6.5 | 1.8 | 28% | 0% |
| Egan | 9.1 | 2.3 | 25% | 0% |
| Church | 4.5 | 2.0 | 44% | 100% |
| Half Moon | 2.0 | 0.0 | 0% | |
| Weaver | 5.9 | 3.7 | 63% | 81% |
| McWeneger | 3.3 | 1.5 | 45% | 73% |
| Brosten Pond | 0.9 | 0.0 | 0% | |
| TOTAL | 32.2 | 11.3 | 35% | 56% |

Quality Riparian Area Protected

Forty-nine percent of the quality riparian area in the focus area is protected, and 40% of that protection can be attributed to the success of the *Flathead River to Lake Initiative* (Figure 8).

Important Agricultural Soils Protected

There are 6,461 acres of important agricultural soils in the focus area, 34% of which are protected, and 75% of that protection is due to the success of the *Flathead River to Lake Initiative* (Figure 9).

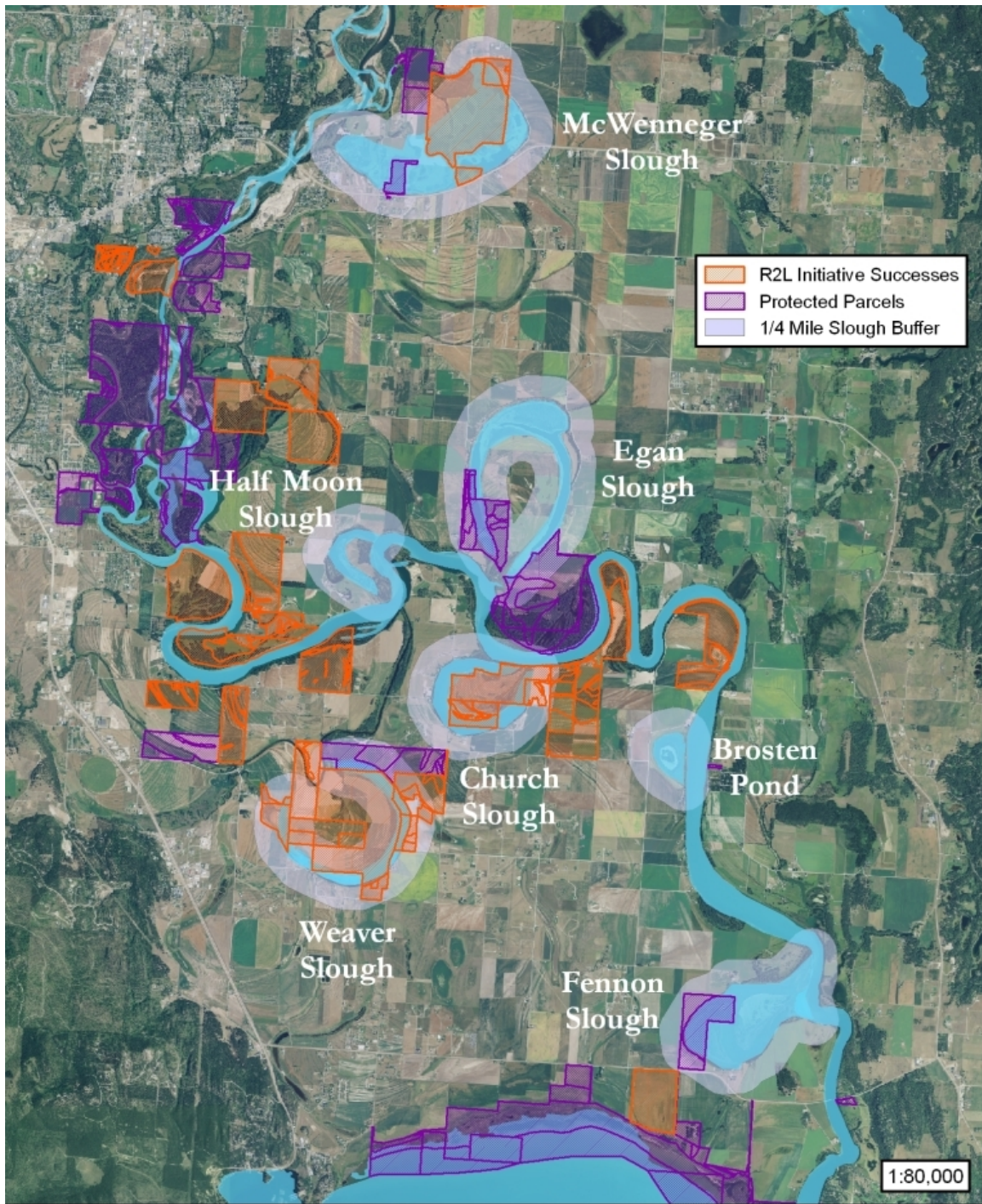


Figure 7. Quarter mile buffer of Flathead River sloughs and important wetlands protected.

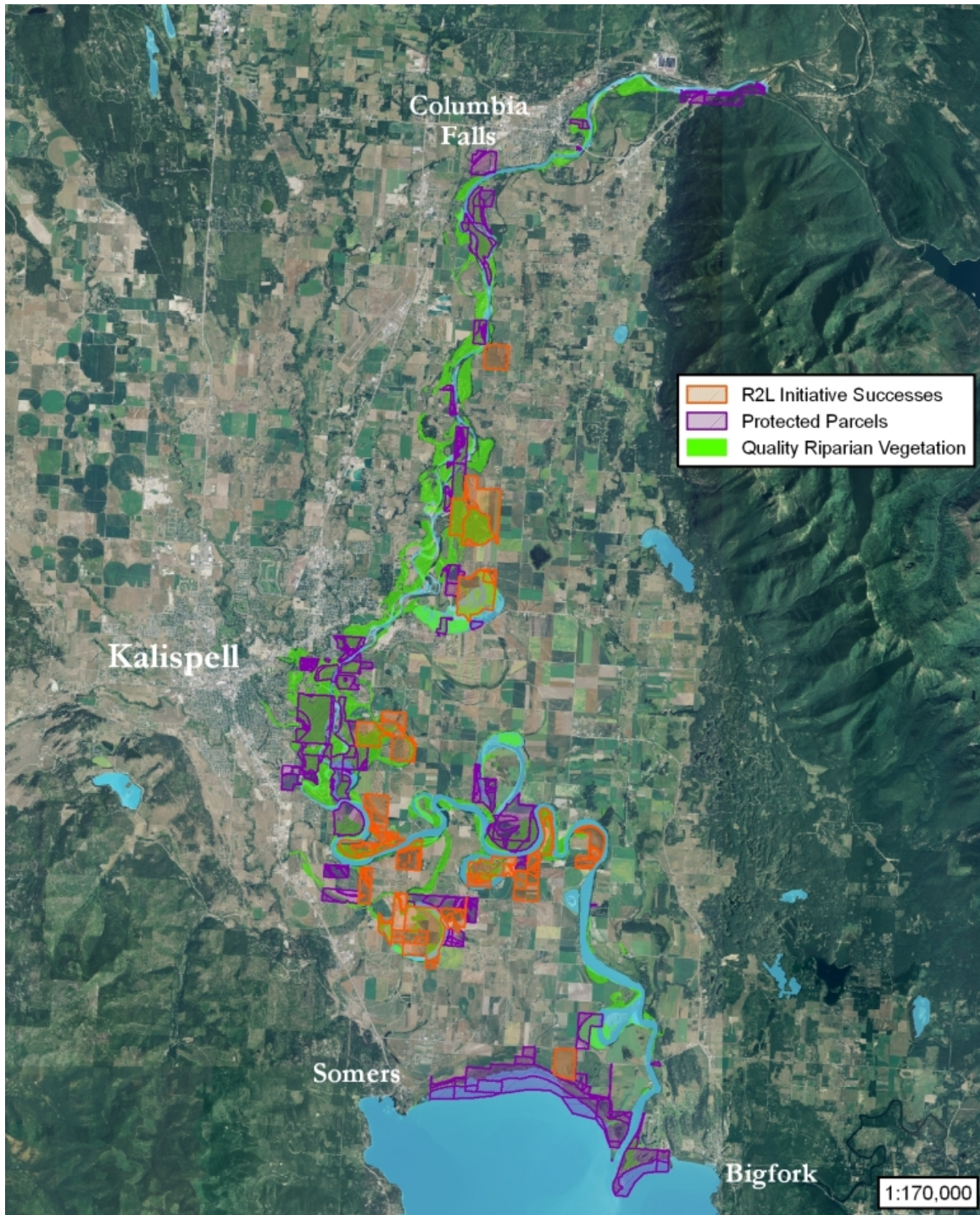


Figure 8. Quality riparian area protected in focus area.

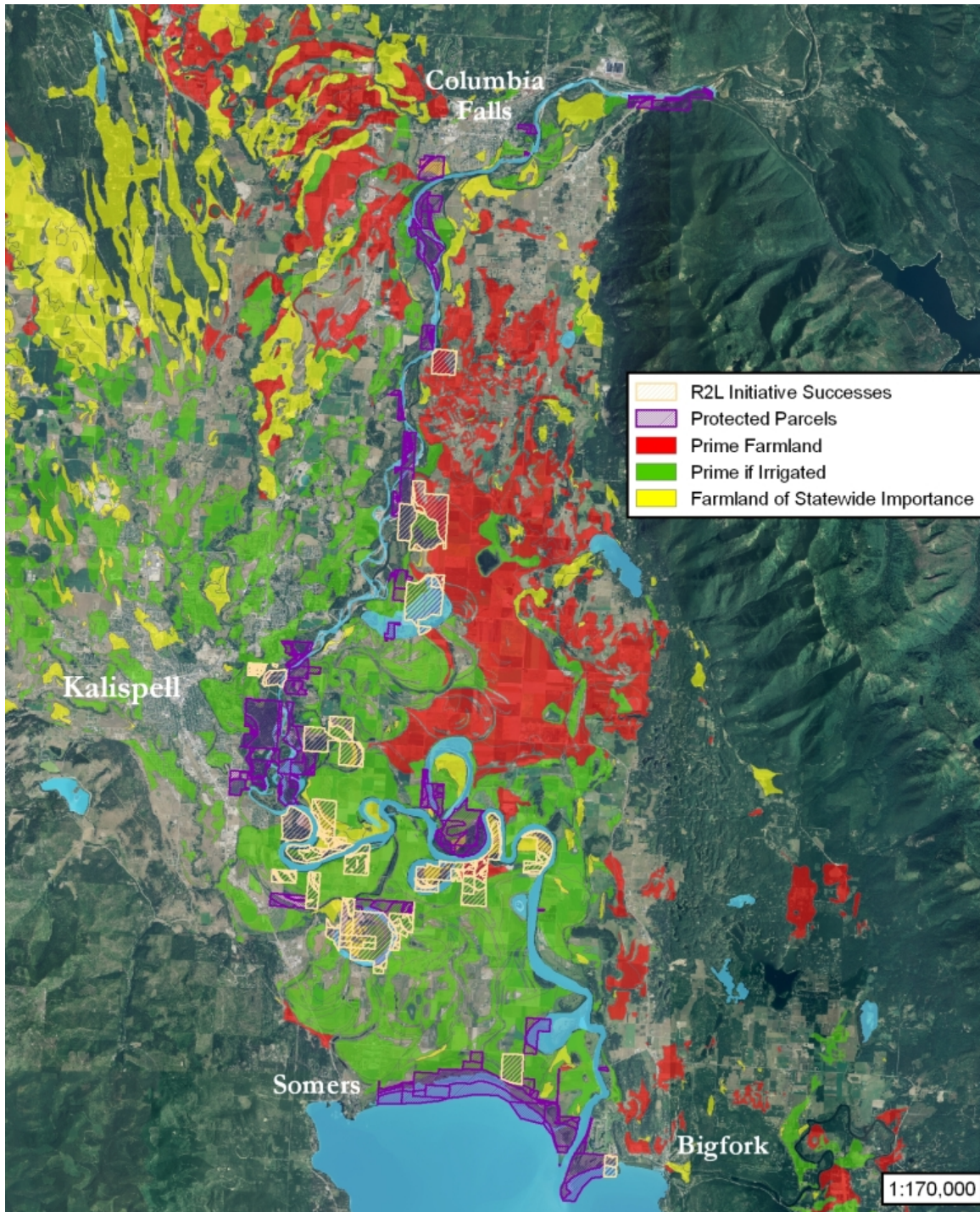


Figure 9. Important agricultural soils protected in the focus area.

Land Protected on North Shore of Flathead Lake

About half of the north shore neighborhood has been protected with the U.S. Fish and Wildlife Service Waterfowl Production Area (WPA) accounting for most of this protection (1,887 acres)(Figure 10). The WPA includes 95% (1,733 acres) of the 100-year floodplain, 80% (556 acres) of the shallow groundwater, 95% (1,636 acres) of the wetlands, 80% (105 acres) of the quality riparian area that is forested or contains shrubs, nearly all (5.8 miles) of the shoreline, and 45% (155 acres) of the important agricultural soils that have been protected. The *Flathead River to Lake Initiative* protected an additional 231 acres, 70 acres of 100-year floodplain, 64 acres of wetlands, 98 acres of its shallow groundwater, and 157 acres of important agricultural soils through land purchased by Montana Fish, Wildlife, and Parks in 2008 and 2009. The other land protected in the north shore neighborhood includes a 29-acre conservation easement held by Montana Land Reliance and a 31-acre property owned by a homeowner's association as open space for their subdivision. Thus, most of the resource protection that has occurred on the north shore has been by government agencies. However, there is ample opportunity for private land conservation on the north shore that would enhance the protection of the WPA, expand wetland protection, and protect important agricultural soils.

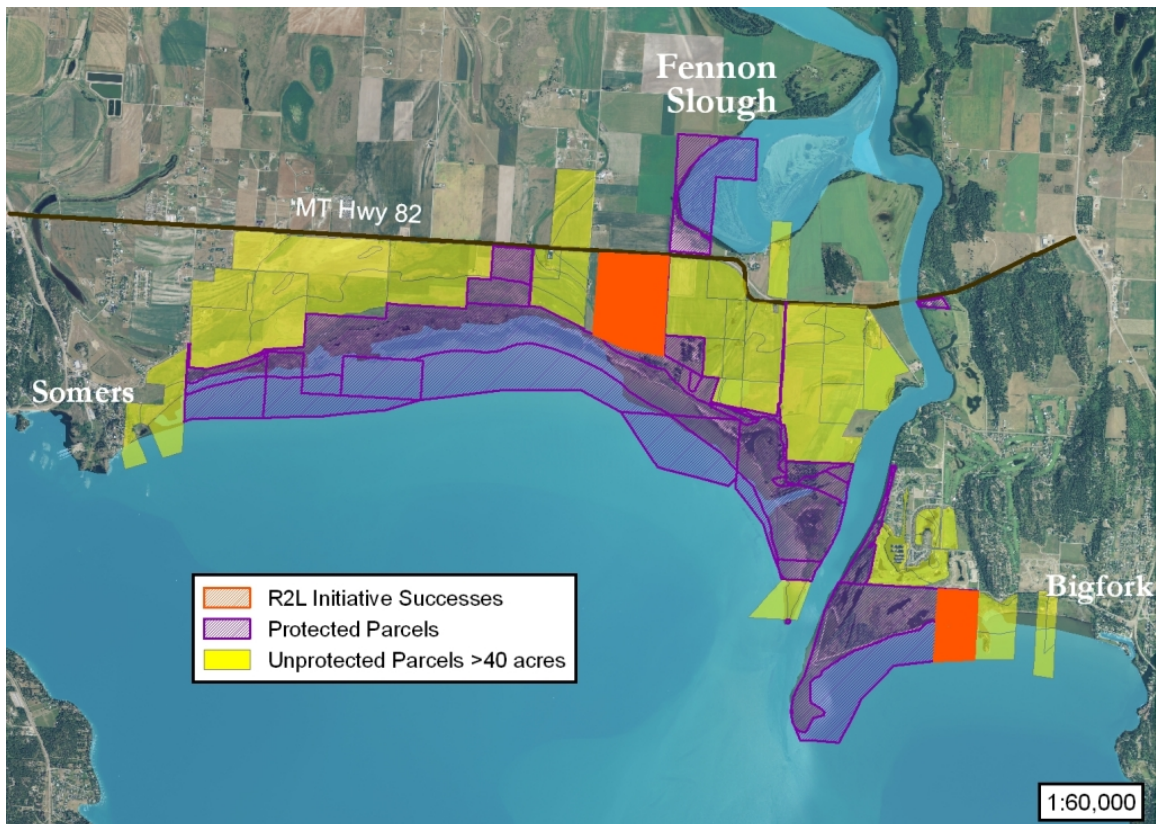


Figure 10. Protected parcels on north shore of Flathead Lake.

Conclusion

Good protection is in place for the Flathead River and north shore of Flathead Lake and its associated resources. Over 50% of the wetlands have already been protected and over 40% of the 100-year floodplain of the Flathead River, shallow groundwater, and quality riparian area in the focus area are protected.

The *Flathead River to Lake Initiative* has significantly added to the land conservation in place to protect the focus area. In fact, 45% of the current protection is due to the *Flathead River to Lake Initiative*.

Although much conservation is in place to protect certain aspects of the focus area, there are opportunities for key conservation that remain. There are 135 unprotected parcels greater than 40 acres remaining in the focus area and 37 of these are greater than 160 acres in size. Only 29% of the main channel has been protected with the upper neighborhood of the Flathead River main channel in most need of protection. In addition, there is ample opportunity for protecting more of the important agricultural soils in the focus area, as only 34% are currently protected. In addition, Fennon, Half Moon and Egan sloughs, and Brosten Pond are lacking in protection. The north shore neighborhood also has many opportunities for future protection.

References

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