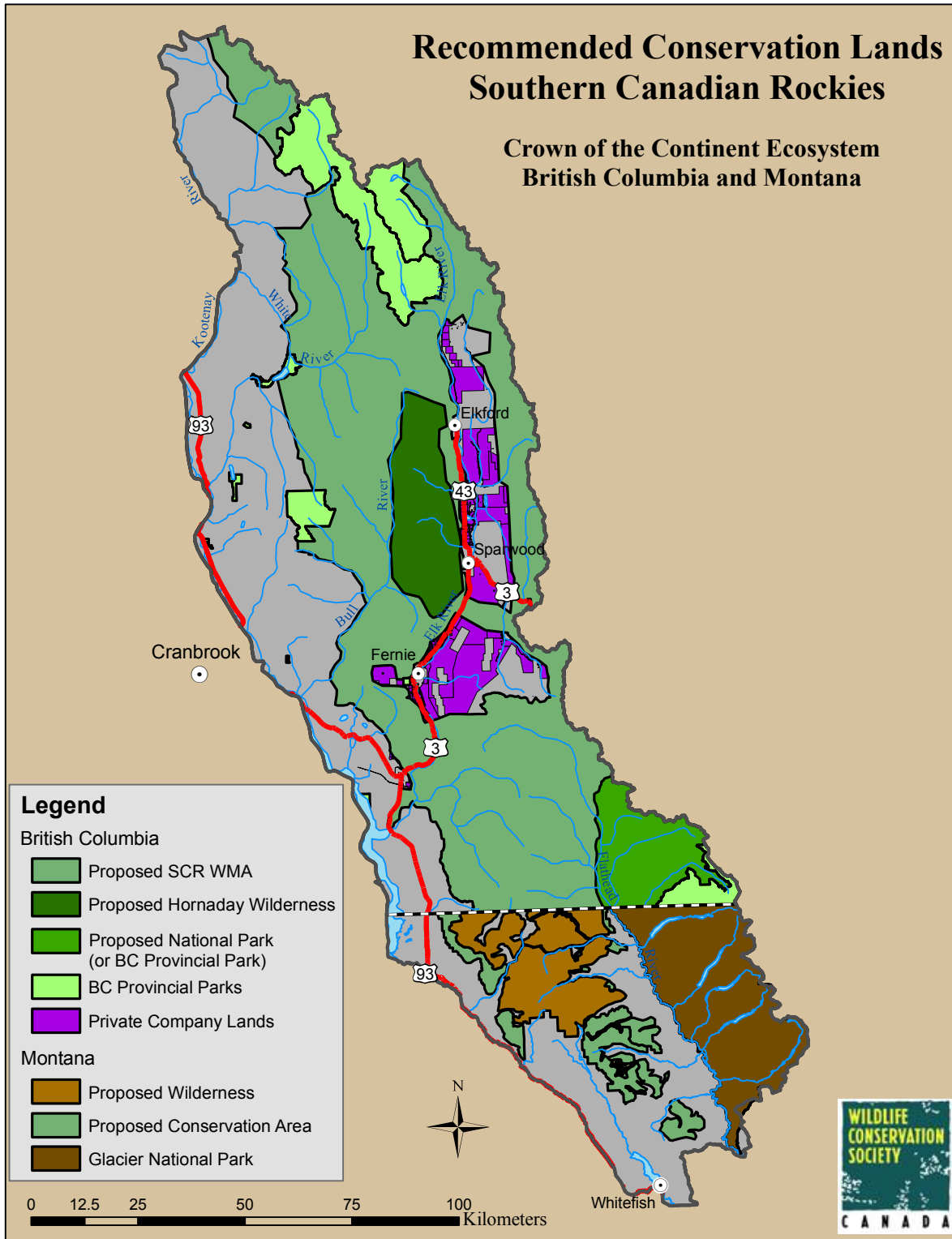


**Figure 23.** Location of recommended conservation lands, Southern Canadian Rockies, British Columbia and Montana.



(3) containing at least 9% of avalanche chutes (Mace and Waller 1997). They recommended that such cores areas be high priority for habitat conservation. The seasonal home ranges of those adult females varied between individuals but averaged 58 km<sup>2</sup> in early season and 74 km<sup>2</sup> in late season. Another key tenet might be to provide a range of elevations, aspects, and topographic complexity to facilitate potential adaptation to changing climates. Depending on the species and landscapes, these can be overlapping and/or complementary features.

I identified candidate sites for safe havens across the Southern Canadian Rockies using the following approach. First, I scaled their size to that of seasonal home ranges of grizzly bears (~78 km<sup>2</sup>) by using a marker circle with a 5-km radius. Next, I searched for places where: (1) the top 50% of composite values were most dense, (2) conservation values for species needing security (e.g., grizzly bear) were very high, and (3) topography was complex with a considerable range of elevations from river valleys to mountain peaks. Finally, I used a common 500-m buffer around secondary roads to explore where management of human access would achieve the most gains in multi-species habitat value with the fewest restrictions.

I identified 36 candidate sites for safe havens across the Southern Canadian Rockies of British Columbia (Figures 25 and 26). Many of these were in the Canadian Flathead and upper Elk River watersheds (including the proposed Hornaday Wilderness). Hopefully, this map of candidate sites will be a catalyst for local and regional conversations capitalizing on a variety of knowledge and perspectives to accelerate planning for adaptation (Cross et al. 2013).

## **Conservation Lands in Montana**

On the Montana side, there are several roadless areas totaling 110,340 ha (272,443 ac) remaining on the Flathead and Kootenai National Forests adjacent to the Canadian border. Some of these lands have considerable value for the suite of vulnerable fish and wildlife species (Weaver 2011, this report).

### **Wilderness Areas**

I recommend the following areas totaling 64,986 ha (160,515 ac) be legislated as part of a new wilderness area (some suggest it be called the Winton Weydemeyer Wilderness) (Figure 23):

- ✓ Thoma-Mount Hefty area,
- ✓ Tuchuck area,
- ✓ Mount Thompson-Seton south to Lake Mountain, including the headwater basins of Williams Creek and Blue Sky Creek on the west side of the Whitefish Divide, and
- ✓ Ten Lakes Scenic Area and the area east of upper Wigwam River including Stahl Peak, Wam Peak, and north nearly to the Canadian border.

These additions would protect the highest-value habitats for these vulnerable fish and wildlife species, enhance connectivity with both Glacier National

Park and the Canadian Flathead/Wigwam, and provide options for future responses to climate change. It would underscore a strong American commitment to protecting the ecological integrity of the trans-border Flathead River basin.

### **Backcountry Conservation Areas**

The US Forest Service and citizens have conceptualized a category called ‘backcountry area’ or ‘conservation area’ (e.g., Rocky Mountain Front Heritage Act). The purpose of these designations is to maintain the wildland character of roadless areas by relaxing some of the more stringent standards of formal Wilderness defined under the Wilderness Act of 1964 (e.g., use of chainsaws is allowed). Along with the designated Wilderness, these roadless backcountry areas would still serve as ‘safe havens’ for vulnerable fish and wildlife species and provide resiliency in the face of warming climate. I recommend the following areas totaling 41,887 ha (103,460 ac) be designated for roadless backcountry conservation (Figure 23):

- ✓ southerly end of the Whitefish Range encompassing roadless portions of Red Meadow Creek, Hay Creek and Coal Creek south to Werner Peak,
- ✓ the Smoky Range,
- ✓ Mount Marston-Patrick Ridge, and
- ✓ lower roadless slopes south and west of Ten Lakes Scenic Area from Gibraltar Ridge northwest to the Canadian border.

Several primitive roads extend westward from main road up the North Fork Flathead River and penetrate deeply into the Whitefish Range. Most of these were constructed for timber harvest back during the 1960-1970s. In recognition of the important fish and wildlife values in the North Fork Flathead River basin, the Flathead National Forest has closed many of these roads on a year-round or seasonal basis. Nonetheless, some of these roads still receive unauthorized use by ATV and/or snowmobiles which, in some cases, may impact wildlife. I recommend that 17 miles of primitive roads in the following priority of headwater drainages be considered for wildland restoration (de-commissioned or otherwise permanently closed and returned to more natural condition) (north to south along the west side of North Fork Flathead River):

- ✓ Trail Creek – Thoma Creek past Frozen Lake,
- ✓ headwaters of South Fork Coal Creek and Mathias Creek, and
- ✓ upper Hallowat Creek
- ✓ upper Hay Creek and south tributary, and.
- ✓ Antley Creek (tributary to Yakinikak Creek).

Assuming a displacement effect of 150 m on each side of these roads, the total acreage would sum to about 2,025 acres. These measures would enhance habitat security for several species, as well as the spatial integrity (less fragmentation) of lands recommended for Wilderness and Backcountry designation.