1.0 INTRODUCTION

This strategy is intended to act as a means of providing structure to the natural heritage priorities of The Land Conservancy within the Kootenay Region. As such, it will identify areas of critical ecological importance (anthropomorphic sites will be dealt with under a separate strategy and will provide a framework within which TLC acquisition criteria can be applied.

Other efforts have been made to quantify those areas that have the highest conservation values within the Kootenay Region. The most recent of these is the Ecoregional Planning process developed by the Nature Conservancy of Canada. These and other resources have done a good job of applying science to the region as a whole. The intent of this document is not to duplicate those efforts, but rather to combine sources of information in a way that will identify regional priorities that reflect the mission and vision of The Land Conservancy.

This strategy is intended to provide a large-scale overview of the region. It is intended to work in concert with the East Kootenay Acquisition Strategy. As such, this document will not describe selected sites in detail, rather it will identify priority areas for TLC. As an organization, The Land Conservancy operates with limited resources. As such, it behooves us to determine those areas that are of the highest priority in order to spend our limited funds on the most desirable properties.

2.0 DEFINITION OF NATURAL AND CULTURAL HERITAGE

TLC has set a broad mandate for its priorities as an organization. In the roughest sense, this mandate breaks down into two categories, natural heritage and cultural heritage. Specifically, TLC's mandate speaks to protecting sites with ecological value as well as properties with historical, cultural, scientific, scenic or compatible recreational value.

In order to more fully determine what TLC's priorities should be, it is important to examine what is meant by natural and cultural heritage and how these categories address our specific mandate. Based on definitions established by UNESCO, which uses similar terminology, those sites which may be considered to be of value from a natural heritage perspective are encompassed in the following definition. Natural heritage includes natural features which have ecological, aesthetic, or scientific value to British Columbians including sites of biological, geological, or physiographical importance. From TLC's perspective, this includes sites with ecological, scientific or scenic values.

Again drawing on the UNESCO definition, cultural heritage can be defined as including: monuments or buildings that are of outstanding value to British Columbia from the point of view of history, art or science and sites that have been influenced by British Columbians and have historical, aesthetic, ethnological or anthropological value. For TLC, this includes sites with cultural, historic and compatible recreational values.

It is important to recognize that most sites will overlap between multiple categories. However, it is likely that sites that are selected for protection by TLC will have greater importance in one category (creating the impetus for protection) and secondary importance in others.

3.0 DESCRIPTION OF THE KOOTENAY REGION

3.1 Political Boundaries

TLC's Kootenay Region is comprised of the Regional Districts of East Kootenay and Central Kootenay as well as Area A of the Kootenay Boundary Regional District. The Kootenay Region is approximately 65,000km^2 in size and runs from the City of Trail in the west, east to the Alberta border and south to the US border. The region includes the cities of Nelson, Castlegar, Trail, Creston, Cranbrook, Kimberley, Fernie and Invermere. Approximately 126,000 people live in the region (RDEK, 2003; RDCK 2001; RDKB 2004).

As with much of the interior of British Columbia, the majority of the private lands in the region are located on the valley bottoms at lower elevations. In the East Kootenay, only 11.4% of the land base is privately owned (EKCP, 2003). This number can likely be extrapolated over the entire region, resulting in only approximately 7,500km^2 (750,000 ha) of lands in the region that are privately owned.

3.2 Land Use

Traditional land use of the area was, and to a certain extent, remains, resource based. Agriculture, forestry and fishing are responsible for 7% of the labour force of the region, while mining and oil and gas are responsible for 5% (BC Stats, 2001 http://www.bcstats.gov.bc.ca/data/cen01/profiles/csd_txt.htm). Timber harvesting is prevalent throughout the region, however, with the exception of some large blocks of land that are owned by the timber companies, large-scale timber extraction occurs primarily on Crown lands.

Mining remains an important land use in some areas, however, it has declined in recent years with the closure of mines such as the Sullivan Mine in Kimberley. Coal mining operations exist in the Elk Valley and six small metal mining operations exist on the eastern side of the Rocky Mountain Trench (Mining Watch, 1999 http://www.miningwatch.org/emcbc/publications/profiles/eastkootenay/1.htm). In the West Kootenay, Teck Cominco Metals Ltd operates a smelter in Trail. Recent efforts to develop coalbed methane resources in the Elk Valley have been proposed, but industry interest is lacking at this time.

Tourism is an increasing land use in recent years in the Kootenay Region as many of the resource sectors close or down-size their operations. Small scale tourism operations may occur on private lands, however, the impacts of these operations are more often felt on higher elevation Crown lands. A side effect of tourism is the increasing urban population of the region as more people chose to retire on small five or ten acre properties, resulting in a long term erosion of connectivity and ecological integrity of previously large scale holdings.

Agriculture is the predominant land use on most of the private land base in the region. Areas near Creston and Trail have long-enough growing seasons to support fruit and produce growers, while in the East Kootenay, larger landowners are likely cattle or livestock producers. Smaller

properties are often operated as hobby farms, with landowners raising small numbers of livestock, often more for recreation than for food.

3.3 Physical Description

Physically, the region is dominated by large north-south valleys, most of which contain natural lakes or man-made reservoirs. The most predominant of these valleys is the Rocky Mountain Trench, the southern part of which extends through the center of the East Kootenay. The eastern part of the region is typically drier and higher in elevation than the western part. Cranbrook, in the East Kootenay is at 939 m and receives an average of 383.4 mm of precipitation per year. Castlegar, in the West Kootenay, is only at 495 m and receives 755.2 mm per year. (Environment Canada, 2004 http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html). These differences in climate result in equal differences in vegetation and ecology.

The Kootenay Region is located within the Southern Interior Mountains ecoprovince and contains part or all of four its seven ecoregions: the Northern Columbia Mountains, the Northern Continental Divide, the Southern Rocky Mountain Trench, and the Western Continental Ranges ecoregions (DeMarchi, 1996 http://srmwww.gov.bc.ca/ecology/ecoregions/title_author.html).

4.0 ECOLOGICAL SITES

The largest component of TLC's efforts to protect natural heritage in British Columbia is the protection of ecological sites in the province. Sites with ecological values are sites that are critical to the survival of plant and animal communities in BC. These sites may include wetlands, grasslands, eustaries, riparian habitats, forest stands, or other key communities or habitats.

Section 4 of this strategy attempts to identify the key areas of ecological importance within the Kootenay Region.

4.1 Biogeoclimatic Zones.

The Kootenay Region also contains six biogeoclimatic zones including Interior Cedar-Hemlock, Alpine Tundra, Ponderosa Pine, Interior Douglas Fir, Engelmann Spruce-Subalpine Fir and Montane Spruce (Demarchi, 1996). Eight subzones of the Interior Cedar Hemlock, Interior Douglas Fir, and Ponderosa Pine zones were determined to be most likely to be found at lower elevations and therefore are more likely to be found on private lands.

These subzones include the Dry Warm Interior Cedar Hemlock (ICHdw), the Very Dry Warm Interior Cedar Hemlock (ICHxw), the Kootenay Moist Cool Interior Cedar Hemlock (ICHmk1), Columbia Shuswap Moist Warm Interior Cedar Hemlock (ICHmw2), Thompson Moist Warm Interior Cedar Hemlock (ICHmw3), Undifferentiated Interior Douglas Fir (Windermere Lake and Arrow Lake) (IDFun), Kootenay Dry Mild Interior Douglas Fir (IDFdm2), and the Kootenay Dry Hot Ponderosa Pine (PPdh2). Of these eight subzones, only ICHmw3 and IDFun are well represented by provincial or federal protected areas within BC. Because IDFun is an undifferentiated subzone, it is difficult to determine whether or not the areas that are protected are fully represented by current protected areas.

BEC Subzone	Percent with Protected Status (provincial data)	Size in Nelson Forest District* (ha)	Percent of Total BC Area in KO Region
ICHdw	3.69%	417,560	90.4%
ICHmk1	4.34%	193,945	59.6%
ICHmw2	7.60%	638,999	72.9%
ICHmw3	26.24%	792	0.16%
ICHxw	0.02%	46,720	100%
IDFdm2	0.95%	289,753	97.9%
IDFun	12.31%	26,809	79.8%
PPdh2	0.19%	94,711	100%

(Data derived from: BC State of the Environment Report
wlapwww.gov.bc.ca/soerpt/pdf/1protectedareas/protected_forest_appendix.xls)
*may include some data from the Boundary Region that falls into TLC's Okanagan Region.

It is worth noting that none of the three drier subzones (ICHxw, IDFdm2, and PPdh2) exceed 1% protection under the protected areas system and that substantial percentages of these subzones are found only in the Kootenay Region.

4.2 Species At Risk

The Southern Interior Mountains Ecoprovince includes the entire Kootenay Region as well as additional lands to the north and west and has 277 identified species at risk, second in BC only to the Southern Interior Ecoprovince at 319 and ahead of the Georgia Depression at 253 species. Of the 99 red-listed species within the Southern Interior Mountains Ecoprovince, five are freshwater fish species, three are dragonflies, three are butterflies, two are amphibians, six are birds, five are mammals and 77 are vascular plants. Of the 178 blue-listed species, six are freshwater fish, five are dragonflies, nine are butterflies, one is an amphibian, eleven are birds, nine are mammals, one is a reptile and 137 are vascular plants (WLAP 2002, http://wlapwww.gov.bc.ca/soerpt/2risk/speciesglance.html).

For the vertebrate species at risk, 19 are found in the PPdh2 subzone, 19 in the IDFdm subzone, 20 in the ICHmk subzone, 24 in the ICHdw subzone and 18 in the ICHmw subzone (Stevens, 1995). No accurate data exists for the ICHxw subzone. Within the Kootenay Region, species at risk hotspots can be identified near Kootenay Lake at Creston, in the Southern Rocky Mountain Trench between Canal Flats and the US border and around Akamina-Kishenena Provincial Park. Smaller hotspots can be found west of Castlegar, at Columbia Lake and in the Elk Valley (CDC 2004a).

Twenty red or blue listed plant communities also occur within the Kootenay Region. Of these, two occur in the IDFun, six in the IDFdm2, six in the PPdh2, four in the ICHmk1, and one each in the ICHmw2, ICHxw, ICHmw3, and ICHdw subzones (CDC 2004b). These plant communities have not been mapped, so more precise locations are unknown.

4.3 Connectivity

The Kootenay Region contains one National Park (Kootenay National Park), 38 Provincial Parks, four Wildlife Management Areas, and six Ecological Reserves. In addition, there is a National Wildlife Area along the Columbia Wetlands between Harrogate and Wilmer. NGO conservation organizations are also active in the region and own or manage more than 40 properties in the East Kootenay. Numbers for the West Kootenay are unknown at this time

To a certain extent, determining areas with important connectivity values is dependant on which species are identified as important and which species can be effectively managed by the further acquisition of private property or stewardship initiatives. In addition, connections that are important on a local level may be eliminated by a coarse filter at the regional or provincial scale. Connectivity work used by the Ministry of Sustainable Resource Management (SRM 2002) shows potential areas of connectivity between existing protected areas. However, this information assumes that those protected areas were established to protect critical habitats which may not always be the case.

Because TLC is primarily limited to working on private lands, large scale connectivity issues are difficult to address when developing an overall strategy. However, these issues should be kept in mind as they may be useful when deciding between properties of otherwise similar merit. It is also important for TLC to consider connectivity issues between existing holdings (both of our own and those held by other conservation organizations). Two small properties that are adjacent may provide greater protection than the same two properties that are independent from one another.

4.4 Priority Habitats

Certain habitats have been identified as regionally important, either due to increasing pressure or to limited distribution within the region. These include wetlands, riparian areas, and cottonwood stands throughout the region; grasslands and deciduous stands in the East Kootenay; and old growth forest (greater than 250 years and greater than 600 years) and dry habitat types (ICHdw, ICHxw, IDFun) in the West Kootenay.

4.5 Analysis

Based on the data provided above, several broad areas can be identified as obvious priorities for TLC's work within the Kootenay Region.

Subregion	Location	Values
East Kootenay	Rocky Mountain Trench	• PPdh2, IDFdm2, IDFun biogeoclimatic zones • Species at risk hotspots at Columbia Lake and Trench south of Canal Flats to US border • Grassland/open forest habitat type • Key wetlands in Columbia River Wetlands from Fairmont Hot Springs to Golden • Cottonwood riparian values along the Kootenay River
	Flathead/Elk Valley	• Species at risk hotspot

		• Cottonwood riparian values along Elk River (Note, NCC has considerable holdings in this area that protect many of these values.)
	St. Mary River Valley	• Cottonwood riparian values
West Kootenay	Creston	• ICHxw, ICHdw biogeoclimatic zones • Species at risk hotspot • Wetlands values
	Syringa Creek-Castlegar	• IDFun biogeoclimatic zone • Species at risk hotspot
	Trail	• ICHxw biogeoclimatic zone
	Salmo	• Wetlands values
	Slocan Valley	• Wetlands values

In the West Kootenay especially, exact locations of priority habitats are unknown. These include cottonwood/riparian ecosystems and old growth forest (both over 250 and over 600 years).

4.6 Implementation

To date, TLC's work in the Kootenay Region has focused on the East Kootenay with an emphasis on grasslands and associated values. As the organization continues to grow, it is likely that different opportunities will present themselves.

This document is intended to provide a framework to be used in conjunction with TLC's newly established acquisition criteria. It is hoped that the priorities outlined in this strategy will allow the application of those criteria in a more judicious manner. The combination of this document in conjunction with the acquisition criteria should make the consideration of future acquisitions by TLC within the Kootenay Region that much easier.