WATERSHED RESTORATION PROGRAM
LEVEL 1 FISH HABITAT
FIELD ASSESSMENT OF SELECTED REACHES
IN KOBES CREEK AND COLT CREEK

Prepared for:

Canadian Forest Products Ltd.
Fort St. John Division

and

Watershed Restoration Program
Ministry of Water, Land and Air Protection
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INTRODUCTION

Colt Creek and Kobes Creek Watersheds were selected by Canadian Forest Products Limited (Canfor) for restoration of fish habitat damaged by pre-code logging (Figure 1). Overview Fish Habitat Assessments (FHAP) of fish and riparian habitat in Colt Creek and Kobes Creek (mainstem) were completed in 2001 (Yazvenko et al. 2002a, 2002b). The Colt Creek overview recommended that Reaches 4 – 13 of the mainstem and in tributaries T2-1 and T2-2 offered the best stream rehabilitation opportunities (Figure 2). Riparian condition at the overview level was assessed and found deficient in several reaches including portions within Reaches 4 - 13 and portions of reaches within Tributaries T2-1, T2-2. The Kobes Creek overview concluded that mainstem Reaches 6 and 12 offered the best stream rehabilitation opportunities. Several reaches were found deficient of proper riparian condition, including portions within Reaches 6, 11 and 12, and portions of reaches within Tributaries T6-1, T6-2, T6-3, T10-1, T10-2, T11-1, T11-2 (Figure 3).

The Level 1 Fish Habitat Field Assessment described in this report target Colt Creek mainstem Reaches 3, 4, 5 as well as Tributaries 2-1 and 2-2. A cursory fish habitat assessment was also conducted in mainstem Reaches 11, 12, and 13 (Figure 2). Target reaches in Kobes Creek include mainstem reaches 6 and 12 as well as Tributaries 6-1, 6-2, 6-3, 10-1-1, 10-1-2 and T-11 (Figure 3).

This project was funded under the BC Watershed Restoration Program (Forest Renewal BC) and managed by Lynx Consulting for Canfor.

BACKGROUND INFORMATION

Colt Creek

Physical Features

Colt Creek is located approximately 115 km WNW of Fort St. John, BC. The watershed drains into the Graham River which flows into the Halfway River approximately 50 km north of Hudson Hope, B.C. (Figure 1). The mainstem is approximately 37 km in length and flows in a SE direction to its confluence with the Graham River. The drainage area of the study area is 154 km^2 (Figure 2).

The lower portions of the Colt Creek Watershed lie in the Boreal White and Black Spruce biogeoclimatic zone (BWBS). The headwaters of the watershed lie in the Engelman Spruce Subalpine Fir biogeoclimatic zone (ESSF). There are two subzones within the Boreal White and Black Spruce zone in the watershed; Reaches 1-3 lie in the Moist Warm subvariant (BWBSmw1), Reaches 4-8 (elevation 1050-1200 m) lie in the Graham Wet Cool subzone (BWBSwk2), and Reaches 9-13 lie in ESSFmv.

Forest fires are frequent in the lower reaches, maintaining a variety of successional stages across landscape. A “Climax” forest is dominated by white spruce, sometimes with minor black spruce. Older stands have at least a few aspen and lodgepole pine remaining as the legacy of the early

successional stages. Dry grassland and scrub vegetation is locally common on steep, sunburnt south-facing slopes.

The lower 14 km of mainstem is a relatively wide, low, gradient, meandering channel with an average bankfull width of 40 m. Farther upstream there is a slight increase in confinement and gradient. Here the amount of fines is reduced and substrate is dominated by cobbles and boulder. Habitat is mainly riffle pool with cover provided by large woody debris (LWD), boulder and undercut banks. Although gradient remains constant in central reaches, the channel is much more confined, with predominately cobble and boulder substrate. Cover is provided by boulder, LWD and undercut banks.

Geology and Slope Stability

The upper half of the Colt Creek Watershed is located in the Rocky Mountain Foothills Ridges that lie in a SSE-NNW direction. Above the 15 km mark, the mainstem channel narrows and the elevation near the headwaters is 1,200 m. The upper 10 km of the stream is relatively entrenched with gradients between 1-8%. Bedrock geology is dominated entirely by sedimentary rocks, predominantly siltstones, sandstones and shale (Holland 1976). Surficial materials are predominantly Quaternary glacial till and post-glacial deposits. Relief is low throughout most of the watershed and topography is subdued. Slope instability is generally rare.

Vegetation

Vegetation of the watershed is dominated by trembling aspen (*Populus tremuloides* Michx.), balsam poplar (*Populus balsamifera ssp. balsamifera* L.), white spruce (*Picea glauca* (Moench) Voss), lodgepole pine (*Pinus contorta var. latifolia* Engelm. ex S. Wats.), and black spruce (*Picea mariana* (P. Mill.) B.S.P.) (DeLong, MacKinnon, and Jang 1990). Balsam poplar and white spruce are particularly common on wetter well-drained sites and along streams, where fires are less frequent and succession can proceed further along uninterrupted. Lodgepole pine is a most common seral species on drier and nutrient-poor sites, such as flat sandy river terraces. Dry pine – lichen communities are common. Black spruce, sometimes with a minor admixture of tamarack (*Larix laricina* (Du Roi) K. Koch), is abundant in wet forests and wetlands, mainly with *Sphagnum*, on poorly drained organic soils (DeLong et al. 1990). Such sites are common though usually not extensive.

Forest fires are frequent throughout the region and are believed to be a vital ecological factor preventing the stagnation of nutrient cycles and maintaining a diversity of successional stages across landscape. Late-seral forest is dominated by white spruce, sometimes with minor proportions of black spruce. Older stands have at least a few veteran aspen and lodgepole pine remaining as the legacy of the early successional stages. Most of the landscape is occupied by a mosaic of seral stands of lodgepole pine, aspen, and mixed white spruce – aspen. Dry grassland and scrub vegetation is locally common on steep, sunburnt south-facing slopes along Colt Creek and other creeks.

On more or less zonal, mid-slope sites, shrub and herb layers are poorly to moderately developed. Most characteristic understory species include highbush cranberry (*Viburnum edule*

(Michx.) Raf.), prickly rose (*Rosa acicularis* Lindl.), bunchberry (*Cornus canadensis* L.), twinflower (*Linnaea borealis* L.), heart-leaved arnica (*Arnica latifolia* Bong.), fireweed (*Epilobium latifolium* L.), and tall bluebells (*Mertensia paniculata var. paniculata* (Ait.) G. Don). On wetter sites and along streams, a denser, white, spruce-dominated forest prevails with a more developed shrub and herb layer consisting typically of highbush cranberry, prickly rose, black gooseberry (*Ribes lacustre* (Pers.) Poir.), black twinberry (*Lonicera involucrata* Banks ex Spreng.), red-osier dogwood (*Cornus sericea ssp. stolonifera* (Michx.) Fosberg), and palmate coltsfoot (*Petasites frigidus var. palmatus* (Ait.) Cronq.).

By far the most common mosses throughout the area are step moss (*Hylocomium splendens* (Hedw.) Schimp. in B.S.G.), red-stemmed feathermoss (*Pleurozium schreberi* (Brid.) Mitt.), and knight's plume (*Ptilium crista-castrensis* (Hedw.) De Not.). On dry sites, lichens (*Cladonia* spp, *Cladina* spp, etc.) are widespread, whereas on wetter sites the above-mentioned three common moss species are joined by leafy mosses (*Mnium* spp.) and many other species which are rarely abundant.

Resource Values

Colt Creek supports a number of salmonid species including Arctic grayling, mountain whitefish, rainbow trout and bull trout. Non-salmonid fish species include slimy sculpin, and longnose sucker.

Numerous wildlife species occur or may occur in the Colt Creek Watershed. These include game and fur bearing species; ducks, geese, grouse, swans, beaver, wolverine, fisher, black bear, grizzly bear, moose, white-tailed deer, mule deer, lynx, bobcat, river otter, mink, marten, muskrat, squirrel, snowshoe hare, coyote, fox, cougar, goat and elk. Other bird species present include eagles, hawks, loons, owls, thrashes, warblers and sparrows. Endangered species (red listed) found in the general region include Peregrine falcon, Northern pocket gopher, American White pelican, Prairie falcon, Upland Sandpiper, Forster's tern, Purple Martin, various warbler species, sharp tailed sparrow, Northern long-eared myotis and the Bison.

Logging History

The total area of cut in the Colt Creek mainstem is moderate at 24 km^2 or 15 % of the watershed area. Harvesting is concentrated in the lower portions of the valley close to the mainstem or tributaries, where timber volume is relatively higher. All harvesting in the study area occurred since 1974; most occurred from 1984 to 1990.

Kobes Creek (mainstem)

Physical Features

Kobes Creek is located in the Peace River drainage near Fort St. John, BC. The creek drains northward into the Halfway River approximately 50 km north of Hudson Hope, BC (Figure 1). Kobes joins the Halfway River approximately 65 km upstream from its confluence with the Peace River. From the headwaters, the mainstem flows for 21 km in a northerly direction and

then turns to the east and flows for 17 km before joining the Halfway River. At approximately 32 km upstream from the mouth of Kobes Creek, the mainstem is joined by a west branch tributary. The east branch is referred to as Upper Kobes Creek Mainstem and the west branch is referred to as West Kobes Creek, where restoration works occurred in 2000 (Murray 2001) and 2001 (Murray 2002a).

The Fish Habitat Assessment study area is the east tributary or Upper Kobes Creek Mainstem. The mainstem of the east tributary is approximately 19 km, while the total mainstem length is 51 km. The drainage area of the study area (i.e., east tributary) is 90.4 km^2. The lower mainstem of the Kobes Creek study was divided into 5 reaches and the east tributary above the fork was assigned 8 additional reaches (i.e., Reaches 6 to 13, Figure 3).

Almost the entire Kobes Creek Watershed lies in the Boreal White and Black Spruce biogeoclimatic zone (BWBS). Reaches 1 to 11 lie in the Peace Moist Warm variant of the Boreal White and Black Spruce biogeoclimatic zone (BWBSmw1). Further to the mountains, Reach 12 and upper reaches of right tributaries within Reaches 6-12 lie in the Murray Wet Cool variant of the Boreal White and Black Spruce biogeoclimatic zone (BWBSwk1). Further upstream, the upper end of Reach 13 lies in the Moist Warm subzone of the Engelmann Spruce – Subalpine Fir biogeoclimatic zone (variant ESSFmw1). Upper areas of some small left tributaries of Kobes Creek lie in the Graham Wet Cool variant of the Boreal White and Black Spruce biogeoclimatic zone (BWBSwk2).

The overall slope of the Kobes Creek Mainstem below the confluence of east and west branches is low at 0.4%. The lower 32 km of mainstem (Reach 1-5 below the forks) is a relatively wide, low gradient meandering channel with an average bankfull width of 30 m.

The first 10 km of the east tributary mainstem is a relatively low, gradient, meandering channel. Habitat consists of a mixture of riffle, pool and glide with cover provided by deep pool, LWD and boulder. Farther upstream there is a slight increase in confinement and gradient. Here the amount of fines is reduced and substrate is dominated by cobbles and boulder. Habitat is mainly riffle pool with cover provided by LWD, boulder and cutbank (Figure 3).

Geology and Slope Stability

Kobes Creek is located east of the Rocky Mountains, mostly on the Alberta Plateau of the Interior Plains physiographic unit (Holland 1976). Bedrock geology is dominated entirely by sedimentary rocks, predominantly Triassic and Cretaceous siltstones, sandstones and shale. Surficial materials are mainly glacial till and outwash deposits. Relief is low throughout most of the watershed (except Reaches 11-13), and topography is subdued. Slope instability is generally rare.

Vegetation

Vegetation of the watershed is dominated by trembling aspen (*Populus tremuloides* Michx.), balsam poplar (*Populus balsamifera ssp. balsamifera* L.), white spruce (*Picea glauca* (Moench) Voss), lodgepole pine (*Pinus contorta var. latifolia* Engelm. ex S. Wats.), and black spruce

(*Picea mariana* (P. Mill.) B.S.P.). Balsam poplar and white spruce are particularly common on wetter well-drained sites and along streams, where fires are less frequent and succession can proceed further along uninterrupted. Lodgepole pine is a most common seral species on drier and nutrient-poor sites, such as flat sandy river terraces. Dry pine – lichen communities are common. Black spruce, sometimes with a minor admixture of tamarack (*Larix laricina* (Du Roi) K. Koch), is abundant in wet forests and wetlands, mainly with *Sphagnum*, on poorly drained organic soils (DeLong et al. 1990). Such sites are common though usually not extensive.

Forest fires are frequent throughout the region and are believed to be a vital ecological factor preventing the stagnation of nutrient cycles and maintaining a diversity of successional stages across landscape. Late-seral forest is dominated by white spruce, sometimes with minor proportion of black spruce. Older stands have at least a few veteran aspen and lodgepole pine remaining as the legacy of the early successional stages. Most of the landscape is occupied by a mosaic of seral stands of lodgepole pine, aspen, and mixed white spruce – aspen. Dry grassland and scrub vegetation is locally common on steep, sunburnt south-facing slopes along Kobes Creek and other creeks.

On more or less zonal, mid-slope sites, shrub and herb layers are poorly to moderately developed. Most characteristic understory species include highbush cranberry (*Viburnum edule* (Michx.) Raf.), prickly rose (*Rosa acicularis* Lindl.), bunchberry (*Cornus canadensis* L.), twinflower (*Linnaea borealis* L.), heart-leaved arnica (*Arnica latifolia* Bong.), fireweed (*Epilobium latifolium* L.), and tall bluebells (*Mertensia paniculata var. paniculata* (Ait.) G. Don). On wetter sites and along streams, a denser white spruce-dominated forest prevails with a more developed shrub and herb layer consisting typically of highbush cranberry, prickly rose, black gooseberry (*Ribes lacustre* (Pers.) Poir.), black twinberry (*Lonicera involucrata* Banks ex Spreng.), red-osier dogwood (*Cornus sericea ssp. stolonifera* (Michx.) Fosberg), and palmate coltsfoot (*Petasites frigidus var. palmatus* (Ait.) Cronq.).

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Resource Values

Kobes Creek and the west tributary to Upper Kobes Creek support a number of salmonid species that include Arctic grayling, mountain whitefish, rainbow trout and bull trout (Brendan Anderson pers. comm., 2001). These salmonids species are also suspected to occur in the east branch study area. Non-salmonid fish species reported in Kobes Creek include lake chub, slimy sculpin, large scale sucker, and longnose sucker (Diversified Environmental Services 1997).

Numerous wildlife species occur in the Kobes Watershed. These include game and fur bearing species; ducks, geese, grouse, swans, beaver, wolverine, fisher, black bear, grizzly bear, moose, white-tailed deer, mule deer, lynx, bobcat, river otter, mink, marten, muskrat, squirrel, snowshoe

hare, coyote, fox, cougar, goat and elk. Other bird species present include eagles, hawks, loons, owls, thrashes, warblers and sparrows. Endangered species (red listed) within the biogeoclimatic zones of the Kobes Watershed include Peregrine falcon, Northern pocket gopher, American White pelican, Prairie falcon, Upland Sandpiper, Forster's tern, Purple Martin, various warbler species, sharp-tailed sparrow, Northern long-eared myotis and the Bison.

Logging History

Logging in the Kobes Creek Watershed is a recent phenomenon that started in the 1980's. Most cutblocks were logged in 1986 and are scattered throughout the watershed. The logging in or near the riparian areas was carried out unevenly throughout the watershed. The lower reaches are almost untouched with only one cutblock in the vicinity of the Reparian Management Area (RMA) in Reach 1. Few cutblocks over the length of the creek extend to the banks of the river. The upper reaches are more extensively logged. Cutblocks extend to the stream in Reach 6 and along the upper tributaries.

The total area logged in the Kobes Creek Mainstem (below the forks) and the east tributary to upper Kobes Creek is 1906 ha or 12.8 % of the watershed area.

LEVEL 1 ASSESSMENT METHODOLOGY

Level 1 Fish and Fish Habitat Assessment were conducted during August and September 2001. These surveys were conducted on foot and involved a crew of two people.
Detailed fish-habitat surveys involved complete sampling of all habitat units within each reach, including photographic documentation. Within each habitat type (pool, riffle, glide, cascade, other), physical attributes were measured and recorded according to methodologies and procedures described in Watershed Restoration Technical Circular No. 8 (WRPTC 1996b). Additional physical attributes recorded at each habitat type included D^{90} and compaction. As outlined in Newbury and Gaboury (1993) substrate size distribution was measured and recorded at one site per reach.

Fish Distribution and Habitat Use

Fish observations were recorded by chainage and habitat type at the time of the detailed fish-habitat survey. Evaluations pertaining to fish presence/absence, distribution, and relative abundance were conducted.

Stream Habitat Condition

Diagnostic Value for Percent Pools and Pool Frequency

Ratings for percent pool habitat and pool frequency (spacing) were conducted for each reach. A poor rating was given if percent pool was less than 30%, a fair rating was given if less than or equal to 40%, and good rating was given if greater than 40%. Similarly, for pool frequency, a poor rating was given if the number of bankfull widths per pool was greater than 4, a fair rating was given if less than or equal to 4, and good rating was given if less than 2.

Diagnostic Value for Deep Pools (Holding Pools)

Watershed Restoration Program Technical Circular No. 8 (WRPTC 1996b) uses the simple criteria of pool depth greater than 1 m to define a "good" holding pool for adult fish. However, this ignores the importance of overhead cover within the pool for creating good fish holding habitat. To account for the inter-relationship between pool depth and cover, the number of deep pools (holding pool) were identified using the following criterion:

deep pool, if (maximum depth x overhead cover >= 30),

where overhead cover includes LWD, boulder, cutbank and overhanging vegetation. Maximum depth was measured during summer low flows. This diagnostic was developed to better reflect the interaction of cover and pool depth in providing suitable habitat to adult salmonids. It is based on observations by the authors, within Vancouver Island streams, of numerous pools that had greater than 1.0 m depth, no cover and no utilization by adult salmonids (or juvenile fish for that matter). Conversely, there are also numerous examples of pools with less than 1.0 m depth, abundant cover (e.g., cutbanks) and adults present.

The diagnostic value of 30 results in inclusion of roughly 30% of all pools within the project area as suitable for adult holding. On one hand, you may have a 3 m deep pool with 10% overhead cover and on the other hand, you may have a 0.5 m deep pool with 60% cover. Each would rate as a good holding pool. Note that there are very few primary pools with depths less than 0.5 m. This is because residual depth must be greater than 0.4 m in channels 2.5 m wide for a pool to be classified (WRPTC 1996b).

The diagnostic value used to assess adequacy of adult holding pools within a reach was then the total number of deep pools per 1000 m of stream within each reach. A rating of poor was given if the number of deep pools as defined above was less than 1 per 1000 m of stream, a rating of fair was given if greater than or equal to 1, but less than or equal to 2, and a rating of good was given if greater than 2.

Diagnostic Value for Spawning Gravel Quantity

Spawning gravel quantity was calculated as 100% of the stream wetted area with available gravels (2-64 mm), plus 6% of the stream wetted area with available cobbles (64-256 mm) times the wetted area of the reach. Gravel quantity was rated as poor if the spawning area was less than 10% of the wetted total area, fair if greater than or equal to 10%, but less than or equal to 25%, and good if greater than 25%.

Diagnostic Value for Spawning Gravel Quality

Spawning gravel quality was coded as high, medium or low based on the degree of compaction and embeddedness (percent fines). Loose and clean substrates (fines < =15%) providing excellent spawning opportunity received a rating of high (H), while compact and embedded substrates (fines > 25%) received a ranking of low (L). A medium ranking (M) refers to moderately embedded and uncompacted gravel (15% < fines < 25%).

Diagnostic Value for Off-channel Habitat

Off-channel habitat was rated as good if there was more than one off-channel area (of any type), fair if there was only one off-channel area, and poor if no off-channel areas were present. Note that this diagnostic as currently defined in Watershed Restoration Program Technical Circular No. 8 (WRPTC 1996b) does not account for the amount of off-channel habitat (i.e., length or area). However, for an off-channel area to be included, it had to be considered, in the opinion of the field biologist, as important habitat. Minimum length or area was not considered.

Hydrology

Watershed hydrology was presented in the Overview FHAP (LGL and CGL 1999, Yazvenko et al. 2002a & 2002b), and included estimates for mean annual discharge, annual runoff, mean monthly discharge, 7-day average low flow, and 2, 10, 25 and 50-year average daily and instantaneous flows.

In the Level 1 FHAP, discharge measurements and cross section surveys were collected at one site in each reach. Bankfull discharges were estimated for each of the study reaches based on the Manning's equation. Level 1 FHAP field measurements of bankfull width, bankfull depth, gradient and bed material size were used in the equation. Manning's "n" (i.e., channel roughness) was based on a pictorial guidebook (Hicks and Mason 1991).

Size of catchment for the study area in Colt Creek and Kobes Creek was determined using GIS ARC/INFO procedures. Gradient profiles were produced for mainstem and tributary reaches to Colt Creek and Kobes Creek, using 1:20,000 TRIM maps.

Recommendations for Rehabilitation

Rehabilitation methods and procedures are described in several sources in the literature. The most frequently used references in this study include: Watershed Restoration Program Technical Circular No. 6 (WRPTC 1998), Watershed Restoration Program Technical Circular No.8 (WRPTC 1996b) and Watershed Restoration Program Technical Circular No. 9 (WRPTC 1997), Newbury and Gaboury (1993) and Raleigh et al. (1984).

LEVEL 1 ASSESSMENT RESULTS

Colt Creek

Fish Sampling

Few fish were captured/observed in Colt Creek (Tables 1 and 2). Both rainbow trout and bull trout were observed in Reach 3; however, only bull trout were observed in Reach 4. A total of 421 s of electrofishing effort was conducted in Reach 5; no fish were captured or observed (Murray 2002b). Further upstream, both rainbow trout and bull trout were electrofished at restoration sites located in Reaches 8, 9 and 10 (Murray 2002b).

Fish Habitat Condition

Detailed habitat condition results are presented in Table 3. Tables 4 through 7 contain summaries of important habitat features. A diagnostic summary of salmonid habitat condition is presented in Table 8. The majority of reaches assessed were of riffle-pool habitat type which is typically important for incubation, juvenile rearing and spawning. In this habitat type, LWD plays a major role for trapping gravel, forming pools and providing overhead cover (WRPTC 1997).

Colt Creek Reach 3 (C3)

Reach 3 is 6,078 m in length, with a mean gradient of 1.15% (Table 3, Table 6; Figure 4). Channel type is riffle-pool morphology with a predominance of cobble and gravel substrate (RPc-w; Tables 5 and 7). Mean channel width is 9.4 m (Table 6). Channel disturbances include eroding banks, mid-channel bars and multiple channels; all common attributes of an aggraded channel. Resulting aggradation is attributed to eroding banks along Reach 3 as well as sediment transported downstream from riparian logged Reach 4 and a hillslope problem (slide) in Reach 5.

Habitat type is predominantly riffle (51%), followed by glide (24.3%) and pool (21.9%; Table 4). Substrate composition is cobble (40%), gravel (33%), fines (19%) and boulder (8%; Table 7). Gravel spawning quantity and quality for spawning is reasonably good (Table 8). However, sub-surface flow through this aggraded reach during autumn and winter months probably precludes successful egg incubation by fall spawning salmonids such as bull trout and mountain whitefish.

Dominant overhead cover is overhanging vegetation at 20.1%; while, deep pool cover and undercut bank cover is poor at <1% and LWD cover is poor at 2.5% (Table 5). Juvenile summer rearing is poor with only 2.6% boulder cover in riffles (Table 5, Table 8). Percent pool area and pool frequency is rated as poor, primarily due to pool infilling (Table 8). However, percent wood cover in the few pools that due exist is fair at 7% (Table 8). The presence of woody material at these sites is contributing to pool formation by scouring bed sediments.

Bed paving material distribution in Reach 3 is presented in Figure 5. The median bed material (7.5 cm) is larger than the bankfull tractive force (6.5 kg/m^2) suggesting that the streambed paving material is relatively stable.

This low gradient, depositional reach is at risk of future sediment inputs from hillslopes and channel overwidening and channel migration further upstream. Therefore, we recommend remedying sediment input problems in upstream Reach 4 and Reach 5 as higher priority restoration opportunities before committing to works in Reach 3. This recommendation is partially based on the problematic equipment access to Reach 3 relative to upstream reaches.

Colt Creek Reach 4 (C4)

Reach 4 extends upstream from Reach 3 a distance of 3,138 m with a mean gradient of 1.6% (Table 3, Table 6; Figure 4). Mean channel width is 9.2 m. Channel type is classified as riffle-pool morphology with a prevalence of cobble and gravel substrate (RPc-w; Tables 5 and 7).

Channel disturbances include eroding banks, mid-channel bars and multiple channels; all common attributes of an aggraded channel. Resulting aggradation is attributed to eroding banks along Reach 4 as well as sediment transported downstream from a hillslope problem (slide) in Reach 5.

Habitat type is predominantly riffle (63.8%), followed by glide (25.7%) and pool (10.5%; Table 4). Substrate composition is cobble (43%), gravel (25%), fines (10%) and boulder (20%; Table 7). Gravel spawning quantity and quality for spawning is reasonably good (Table 8). Juvenile summer rearing is ranked fair with 24% boulder cover in riffle habitat (Table 5).

Total overhead cover is good, dominated by boulder cover (Table 8). Percent pool area and pool frequency is rated as poor due to pool infilling (Table 8). No doubt, the high percent of glide habitat (25.7%) are infilled pools. Proper placement of woody material, such as, at the base of riffles will create scour pools. Percent wood cover in the few pools that due exist is fair at 8.7% (Table 8). The presence of woody material at these sites is contributing to pool formation by scouring bed sediments.

Bed paving material distribution in Reach 4 is presented in Figure 6. The tractive force, calculated at 14.1 kg/m^2, will move particles as large as 14.1 cm (mean diameter). However, the median bed material is 4.7 cm which provides further evidence that channel aggradation is occurring and that the existing channel is relatively unstable.

The likelihood of benefits to fish and fish habitat from instream restoration is high in the more stable areas of the reach; therefore, we recommend the following options:

- reshape meander bends and complex with multiple log structures such as LT3's in series to reduce channel migration and bank erosion, while creating pool habitat with woody cover;
- place multiple log structures at the downstream end of cobble riffles to create scour pools with overhead cover;
- stabilize gravel bars and protect stream banks with boulder and LWD structures; and
- reduce channel headcutting by constructing pool and riffle sequences.

Colt Creek Reach 5 (C5)

Reach 5 extends upstream from Reach 4; a distance of 609 m with a mean gradient of 2.0%. (Tables 3 and 6; Figure 4). Mean channel width is 8.7 m (Table 6). Channel type is riffle-pool morphology with a prevalence of cobble and boulder substrate (RPc-b; Tables 5 and 7). Channel disturbances include eroding banks and LWD parallel to shore.

Habitat type is predominantly glide (55.8%), followed by pool (25.1%), riffle (16.5%) and cascade (2.6%; Table 4). Substrate composition is cobble (43%), boulder (31%), gravel (27%), and fines (10%) 20%; Table 7). Gravel spawning quantity and quality for spawning is fair (Table 8). Juvenile summer rearing is ranked good with 39% boulder cover in riffle habitat (Table 5).

Total overhead cover is good, dominated by boulder cover at 42.9% (Table 8). Percent pool area and pool frequency is rated as poor (Table 8). Percent wood cover is poor at 0.1% (Table 8). Pools are controlled by boulder structure rather than woody material.

Bed paving material distribution in Reach 5 is presented in Figure 7. The median bed material (12.3 cm) is smaller than the bankfull tractive force (14.3 kg/m^2) suggesting that the streambed paving material is relatively unstable.

The likelihood of benefits to fish and fish habitat from instream restoration work is low; therefore, we do not recommend instream restoration activity in Reach 5. However we do recommend additional hillslope assessment of the right bank slide in Reach 5.

Colt Creek Reach 11 (C11)

Reach 11 extends upstream 1,600 m from Reach 10; mean gradient is 2.9% (Figure 4). Mean channel width is approximately 3 m. Moss covered undercut banks with height 0.25 to 0.30 m is common. Channel type is riffle-pool morphology with a prevalence of cobble and gravel substrate (RPc-g). Occasional sill logs are functioning as gradient control structures. Channel disturbances are few; sediment wedge formation occur upstream of occasional sill logs.

Habitat type is predominantly riffle. Substrate composition is primarily cobble and gravel. Gravel spawning quantity and quality for spawning appears adequate. Juvenile summer rearing is good with overhead cover composed predominantly of boulder and undercut banks.

More gradient control structures using sill logs and designed based on natural instream templates, would benefit fish and fish habitat. However, machine access may be problematic. Hand placing material would only be beneficial in the short-term. Therefore, we recommend further fish presence, distribution surveys using multiple techniques; to determine fish abundance and habitat utilization. Restoration work in Reach 11 would be a few years away, being a lower priority than works in downstream reaches.

Colt Creek Reach 12 (C12)

Reach 12 is 350 m in length with a mean gradient 4.3% (Figure 4). Mean full bank width is approximately 3 m. Mean bank height is approximately 0.20 m; mean bank depth approaches 0.60 m.

At mean gradients greater than 4%, step-pool habitat type should be encouraged where pool structure is controlled by rock rather than woody material. At the present time, we do not recommend instream restoration activity in Reach 12.

Colt Creek Reach 13 (C13)

Reach 13 extends upstream from Reach 12 a distance of 1,170 m. Mean gradient is also 4.3%. Mean full bank width is in the range 1.2 to 1.4 m. Mean bank height is approximately 0.25 m. Substrate is dominated by cobbles. Once the canopy cover returns, Reach 13 appears to be

suitable rearing habitat for juvenile salmonids. No instream restoration works are recommended for Reach 13.

Colt Creek Tributaries 2-1 and 2-1

These tributaries are ephemeral streams with one meter wide full bank channels that are not suitable for sustaining salmonid fisheries. No instream restoration activity is recommended.

Kobes Creek

Fish Sampling

A total of 33 rainbow trout were observed in Kobes Creek during the Level 1 field survey (Tables 1 and 2). Although no bull trout were observed, there presence is suspected since Bull trout were observed in West Kobes Creek in 2001 (B. Anderson pers. comm.). Young-of-the-year catastomids (probably long nose suckers) were also observed in Reach 6, Kobes Creek.
Fish Habitat Condition

Detailed habitat condition results are presented in Table 3. Tables 4 through 7 contain summaries of important habitat features. A diagnostic summary of salmonid habitat condition is presented in Table 8. The majority of reaches assessed were of riffle-pool habitat type which is typically important for incubation, juvenile rearing and spawning. In this habitat type, LWD plays a major role for trapping gravel, forming pools and providing overhead cover (WRPTC 1997).

Kobes Creek Reach 6 (K6)

Reach 6 is 5,050 m in length, with a mean gradient of 0.6% (Table 3, Table 6; Figure 10). Channel type is riffle-pool morphology with a predominance of cobble and gravel substrate (RPc-w; Table 5 and Table 7). Mean channel width is 11.4 m (Table 6). Channel disturbances include eroding banks, non functional LWD parallel to channel, mid-channel bars and log jams.

Habitat type is predominantly pool (45.4%), followed by riffle (27.8%) and glide (25.5%; Table 4). Substrate composition is cobble (36%), gravel (27%), fines (28%) and boulder (10%; Table 7). Gravel spawning quantity is good, however spawning quality is rank fair (Table 8).

Percent pool area is good; however, pool frequency is poor (Table 8). Overhead cover is good; dominant overhead cover is boulder and LWD (Table 5). Juvenile summer rearing is fair with 12.6% boulder cover in riffles (Table 5, Table 8). However, percent wood cover in pools is poor at 4.8% (Table 8). This is interesting because there is an abundance of LWD in the reach (3.63 pieces per bankfull width); however, LWD distribution is clumped in several log jams.

Bed paving material distribution in Reach 6 is presented in Figure 11. The median bed material (6.5 cm) is larger the bankfull tractive force (3.6 kg/m^2) suggesting that the streambed paving material is relatively stable.

Restoration work in Reach 6 would be beneficial to fish and fish habitat. Typical works in a channel wavelength would include:

- place multiple log structures at the downstream end of cobble riffles to create scour pools with overhead cover;
- stabilize gravel bars with bar apex jams and roughen downstream bar with LWD to trap sediments during flood events; and
- protect stream banks and provide instream pool cover with boulder and LWD structures.

Material access to restoration sites will be problematic, particularly boulder anchoring material. Therefore, we recommend using duck-bill or manta ray anchors in lieu of boulders. Obtaining LWD pieces by thinning riparian stands will facilitate bank protection and instream works immensely.

Kobes Creek Reach 10-1 (T10-1-1, T10-1-2)

Reach 10-1-1 and 10-1-2 are 1,704 and 887 m in length, respectively (Table 3, Table 6). Channel type is riffle-pool morphology with a predominance of cobble and gravel substrate (RPc-w; Tables 5 and 7). Mean channel widths are 5.9 and 5.4 m, respectively (Table 6). Channel disturbances include eroding banks, non-functional LWD parallel to channel, mid-channel bars and log jams.

In Reach 10-1-1, habitat type is 39.7% pool, 36.3% riffle and 24% glide; while, reach 10-1-2 is 47.5% riffle, 28.4% pool and 24.1% glide (Table 4). In both reaches substrate composition is predominantly cobble-gravel with a moderate amount of fines (Table 7). Gravel spawning quantity is good, however spawning quality is ranked fair due to the amount of fines (Table 8).

Percent pool area is fair in Reach 10-1-1 and poor in Reach 10-1-2; however, pool frequency is poor in both reaches (Table 8). Overhead cover is good in Reach 10-1-1 and fair in Reach 10-1-2. Dominant overhead cover is overhanging vegetation and undercut banks (Table 5). Juvenile summer rearing is poor in both reaches with 3% and 3.5% boulder cover in riffles (Table 5, Table 8). However, percent wood cover in pools is fair at 6.3% (T10-1-1) and poor at 0.7% (10-10-1-2; Table 8).

Bed paving material distribution is presented in Figure 12. The median bed material (6.2 cm) is smaller than the bankfull tractive force (12 kg/m^2) suggesting that the streambed paving material is unstable.

Restoration work in Reach 10-1-1 would be beneficial to fish and fish habitat. Typical works include:

- place multiple log structures at the downstream end of cobble riffles to create scour pools with overhead cover;
- stabilize gravel bars with bar apex jams and roughen downstream bar with LWD to trap sediments during flood events; and
- protect stream banks and provide instream cover with boulder and LWD structures.

Similar to Reach 6, material access to restoration sites will be problematic, particularly boulder anchoring material. Therefore, we recommend using duck-bill or manta ray anchors in lieu of boulders. Obtaining additional LWD pieces by thinning riparian stands would facilitate bank protection and instream works.

Kobes Creek Reach 12

Reach 12 extends a distance of 1,320 m at a mean gradient of 3%. Mean bankfull width is between 3 to 4 m. Channel type is riffle-pool morphology with a predominance of cobble and gravel substrate (RPc-w). Channel disturbances include eroding banks, mid-channel bars and major beaver activity in the lower section of the reach which precluded conducting a detailed level 1 assessment. Any restoration work in Reach 12 would be considered low priority due to this beaver activity.

Kobes Creek Tributaries 6-1, 6-2, 6-3

These tributaries are ephemeral streams (gradients >4 %, bankfull channel widths <2 m) that are not suitable for sustaining salmonid fisheries. No instream restoration activity is recommended.

Hydrology

Summary of estimated flows for Colt Creek and Kobes Creek, based on gauged streams in the Peace River area are presented in Tables 9 and 10, respectively. Stream discharges and channel characteristics measured during the field survey are presented in Table 11 for Colt Creek and Table 12 for Kobes Creek. Typical cross sections for Colt Creek reaches are presented in Figure 8 and Figure 9; while, cross sections for Kobes Creek are presented in Figure 13 and Figure 14, respectively. Bankfull discharge corresponds approximately to a 2 out of 3 year return period.

SUMMARY OF STREAM REHABILITATION OPTIONS

The Level 1 Assessment results indicate that salmonid production is limited by late summer juvenile rearing, overwintering and adult holding, especially during low flow periods. Poor pool structure and frequency has resulted from inadequate amounts of LWD present due, in part, to riparian logging practices and reduced depths in pool and glide habitats from sediment aggradation and channel overwidening. We recommend that restoration designs be prepared for Reach 4 of Colt Creek and Reaches 6 and 10-1-1 of the east branch of Kobes Creek. Our recommended approach or restoration strategy to remedy this situation will be to:

- reshape meander bends and complex with multiple log structures such as triangulated lateral log jams in series to reduce channel migration and bank erosion, while creating pool habitat with woody cover;
- place multiple log structures at the downstream end of cobble riffles to create scour pools with overhead cover;
- stabilize gravel bars and protect stream banks with boulder and LWD structures; and
- reduce channel headcutting by constructing pool and riffle sequences.

The installation of LWD structures along eroding banks will reduce bank erosion and lead to a narrower, more stable channel over time. The LWD anchored in pools will also benefit the rearing habitat of juvenile trout that require cover for late summer rearing and lower velocity areas during freshets.

LITERATURE CITED

DeLong C., A. MacKinnon, and L. Jang. 1990. A Field Guide for Identification and Interpretation of Ecosystems of the Northeast Portion of the Prince George Forest Region. (Land management handbook no. 22). MoF, Victoria, BC. 108 pp.

Diversified Environmental Services. 1997. Reconnaissance Level Stream Inventory - 1996. Halfway River and West Tributaries. Prepared for Canadian Forest Products Ltd., Fort St. John, Taylor Division, RR#1, Comp 2, Site 13, Fort St. John, BC.

Hicks, D.M., and P. D. Mason. 1991. Roughness Characteristics of New Zealand Rivers – a handbook for assigning hydraulic roughness coefficients to river reaches by the "visual comparison" approach. New Zealand Water Resources Survey.

Holland, S. 1976. Landforms of British Columbia. Bulletin 48, British Columbia Department of Mines and Petroleum Resources. pp 138.

LGL and CGL. 1999. Overview Assessment of Upper Kobes Creek Watershed for Fish and Riparian Habitat. Prepared for Ministry of Environment, Lands and Parks, Fort St. John, BC.

Murray, R.B. 2001. Instream Restoration Reach 8, West Kobes Creek 2000 Asbuilt Report. Prepared for Canadian Forest Products Ltd. and Watershed Restoration Program, Ministry of Water, Land and Air Protection, Fort St. John, BC. Report EA 1397.

Murray, R.B. 2002a. Instream Restoration Reach 4, West Kobes Creek 2001 Asbuilt Report. Prepared for Canadian Forest Products Ltd. and Watershed Restoration Program, Ministry of Water, Land and Air Protection, Fort St. John, BC. Report EA 1489.

Murray, R.B. 2002b. Instream Routine Effectiveness Evaluations Kobes and Colt Watersheds. Prepared for Canadian Forest Products Ltd. and Watershed Restoration Program, Ministry of Water, Land and Air Protection, Fort St. John, BC. Report EA 1490-1.

Newbury, R.W. and M.N. Gaboury. 1993. Stream analysis and fish habitat design. Manitoba Department of Natural Resources, Winnipeg.

Newbury, R.W., M.N. Gaboury, and D.J. Bates. 1997. Restoring Habitats in Channelized or Uniform Streams Using Riffle and Pool Sequences. *in* Slaney, P.A. and D. Zaldokas [eds.] Fish Habitat Rehabilitation Procedures. British Columbia Ministry of Environment, Lands and Parks, and British Columbia Ministry of Forests, Watershed Restoration Program, Technical Circular No. 9.

Poulin V.A., C. Harris, B. Simmons. 2000. Riparian Restoration in British Columbia: What's Happening Now, What's Needed for the Future. Prepared for Ministry of Forests, BC: 71 pp.

Raleigh, R.F., T. Hickman, R.C. Solomon, and P.C. Nelson. 1984. Habitat suitability information: Rainbow trout. US Fish Wildl. Serv. FWS/OBS-82/10.60. 64 pp.

WRPTC. 1996a. Watershed Restoration Program Technical Circular No. 7: Channel conditions and prescriptions assessment (Interim Methods). Hogan, D.L., S.A. Bird, and D.J. Wilford. Ministry of Environment, Lands and Parks and Ministry of Forests.

WRPTC. 1996b. Watershed Restoration Program Technical Circular No. 8: Fish Habitat Assessment Procedures. N.T. Johnston and P.A. Slaney. Ministry of Environment, Lands and Parks and Ministry of Forests.

WRPTC. 1997. Watershed Restoration Program Technical Circular No. 9: Fish Habitat Rehabilitation Procedures. P.A. Slaney and D. Zaldokas, eds. Ministry of Environment, Lands and Parks and Ministry of Forests.

WRPTC. 1998. Watershed Restoration Program Technical Circular No. 6: Riparian Assessment and Prescription Procedures. Draft, March 1998. Ministry of Environment, Lands and Parks, and Ministry of Forests.

WSC (Water Survey of Canada). 1989. Historical streamflow summary: British Columbia Environment Canada. EN 36-418/1988-7, 1,056 p.

Yazvenko, S., J. Ferguson, P. Kuntz and A. Chapman. 2002a. Overview Assessment of Colt Creek for Fish and Riparian Habitat. Report prepared by LGL Limited, Sidney, BC, for Lynx Consulting, Fort St. John, BC. Report EA1415.

Yazvenko, S., J. Ferguson, P. Kuntz and A. Chapman. 2002b. Overview Assessment of Kobes Creek for Fish and Riparian Habitat. Report prepared by LGL Limited, Sidney, BC, for Lynx Consulting, Fort St. John, BC. Report EA1415.

TABLES

Table 1. Summary of fish observations in Colt and Kobes creeks, by reach, location, and species.

Sub Basin	Reach Name	Reach location [1] (m)	Habitat Type [2]	Survey method [3]	Salmonids Captured [4]								Forage Fish		
					Rainbow		Bull Trout		Whitefish		Arctic Grayling		Sucker spp.		Sculpin
					No.	length (mm)	No.	length (mm)	No.	length (mm)	No.	length (mm)	No.	length (mm)	No.
Colt Creek	C3	0+667	G	VO	1	150			0		0		0		
Colt Creek	C3	1+095	G	VO	0		1	220	0		0		0		
Colt Creek	C3	3+250	P	VO	0		1		0		0		0		
Colt Creek	C3	3+840	P	VO	0				0		0		0		1
Colt Creek	C4	0+884	G	VO	0		1	250	0		0		0		
Colt Creek	C4	1+937	R	VO	0				0		0		0		1
Colt Creek	C4	3+085	R	VO	0		1	300	0		0		0		
Kobe Creek	K6	0+462	G	VO	1	300	0		0		0		0		
Kobe Creek	K6	0+462	G	VO	1	130	0		0		0		0		
Kobe Creek	K6	0+462	G	VO	1	200	0		0		0		0		
Kobe Creek	K6	0+462	G	VO	1	150	0		0		0		0		
Kobe Creek	K6	1+238	R	VO	1	50	0		0		0		0		
Kobe Creek	K6	1+570	G	VO	1	100	0		0		0		0		
Kobe Creek	K6	1+900	P	VO	1	80	0		0		0		0		
Kobe Creek	K6	2+050	G	VO	1	100	0		0		0		0		
Kobe Creek	K6	2+100	P	VO	2	25	0		0		0		0		
Kobe Creek	K6	2+600	P	VO	1	80	0		0		0		0		1
Kobe Creek	K6	2+754	P	VO	0		0		0		0		12	20	
Kobe Creek	K6	2+805	G	VO	1	30	0		0		0		0		
Kobe Creek	K6	2+850	P	VO	0		0		0		0		4	20	
Kobe Creek	K6	2+910	P	VO	1	60	0		0		0				
Kobe Creek	K6	3+050	P	VO	3	80	0		0		0				
Kobe Creek	K6	3+245	R	VO	1	80	0		0		0				
Kobe Creek	K6	3+250	R	VO	1	80	0		0		0				
Kobe Creek	K6	3+430	P	VO	1	150	0		0		0				
Kobe Creek	K6	3+670	G	VO	1	100	0		0		0				
Kobe Creek	K6	3+843	R	VO	1	80	0		0		0				
Kobe Creek	K6	4+000	P	VO	1	80	0		0		0		>50	20	
Kobe Creek	K6	4+100	R	VO	1	100	0		0		0				

Table 1. Summary of fish observations in Colt and Kobes creeks, by reach, location, and species.

Sub Basin	Reach Name	Reach location [1] (m)	Habitat Type [2]	Survey method [3]	Salmonids Captured [4]								Forage Fish		
					Rainbow		Bull Trout		Whitefish		Arctic Grayling		Sucker spp.		Sculpin
					No.	length (mm)	No.	length (mm)	No.	length (mm)	No.	length (mm)	No.	length (mm)	No.
Kobe Creek	K6	4+325	R	VO	3	100	0		0		0				
Kobe Creek	K6	4+593	R	VO	2	60	0		0		0				
Kobe Creek	K6	4+880	P	VO	0		0		0		0		4	25	
Kobe Creek	K6	5+050	G	VO	1	50	0		0		0				
Kobe Creek	T10-1-1	0+565	R	VO	1		0		0		0				
Kobe Creek	T10-1-1	1+106	P	VO	1	200	0		0		0				
Kobe Creek	T10-1-1	1+283	P	VO	1	200	0		0		0				
Kobe Creek	T10-1-1	1+450	P	VO	1	160	0		0		0				
Kobe Creek	T10-1-2	0+083	P	VO	1	120	0		0		0				
Kobe Creek	T10-1-2	0+219	G	VO	1	150	0		0		0				
Kobe Creek	T10-1-2	0+219	G	VO	1	120	0		0		0				
Kobe Creek	T10-1-2	0+295	P	VO	1	150	0		0		0				
Kobe Creek	T10-1-2	0+561	P	VO	1	140	0		0		0				
Kobe Creek	T10-1-2	0+737	R	VO	1	30	0		0		0				
Kobe Creek	T10-1-2	0+855	R	VO	1	35	0		0		0				

[1]Sample location (in meters); denotes the distance upstream from base of reach.

[2]Habitat codes are: P = pools (both scour and dammed pool); R = riffle; G = run; C = cascades; BP = beaver pond.

[3]Survey methods are: MT = minnow trap; E = electrofishing; VO = visual observation.

Table 2. Level 1 fish distribution form for Colt and Kobes creeks.

	Survey Method		RB	RB	RB	BT	BT	BT	AG	AG	AG	MW	MW	MW
Reach	Juv	Ad	juv	ad	sp	juv	ad	sp	juv	ad	sp	juv	ad	sp
Colt Cr														
C3	VO	VO	K	K	S	K	K	S	S	S	S	S	S	S
C4	VO	VO	K	K	S	K	K	S	S	S	S	S	S	S
C5	VO	VO	K	K	S	K	K	S	S	S	S	S	S	S
T2-1	VO	VO	N	N	N	N	N	N	N	N	N	N	N	N
T2-2	VO	VO	N	N	N	N	N	N	N	N	N	N	N	N
Kobes														
K6	VO	VO	K	K	K	S	S	S	S	S	S	S	S	S
T6-1	VO	VO	N	N	N	N	N	N	N	N	N	N	N	N
T6-2	VO	VO	N	N	N	N	N	N	N	N	N	N	N	N
T6-3	VO	VO	N	N	N	N	N	N	N	N	N	N	N	N
T10-1-1	VO	VO	K	S	S	S	S	S	S	S	S	S	S	S
T10-1-2	VO	VO	K	S	S	S	S	S	S	S	S	S	S	S
T-11	VO	VO	N	N	N	N	N	N	N	N	N	N	N	N
R12	VO	VO	S	S	S	S	S	S	S	S	S	S	S	S

Symbols:

MT/EL - minnow trapping/electrofishing
VO - visual observation
K - presence known
N - not present
S - presence suspected
U - presence unknown
H - historical presence

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally											Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	0	R	1	15	2	0.12	0.30	0.30	8.0	3.8	57	5	35	55	5	0	L	0.20	R	M	22		0.12				0	0	0	0	0.0	5	0	0	0	5	0					N
Colt Creek	C3	15	P	1	52	0.5	0.65	0.50	0.55	8.7	6.4	333	40	35	30	5	0	M	0.25	R	M	122	0.80	0.13	0.67	R	Y	11	0	11	0	16.8	5	0	0	0	22	30				EB, JM	N
Colt Creek	C3	67	R	1	28	3.0	0.12	0.20	0.20	6.5	5.0	140	10	28	60	2	0	M	0.30	R	L			0.13				0	0	0	0	0.0	2	2	0	0	4	15				MB	N
Colt Creek	C3	95	P	1	20	0	0.33	0.30	0.25	5.1	4.8	96	25	28	45	2	0	M	0.25	R	L	29	0.60	0.13	0.47	R		2	1	1	0	1.2	2	5	0	0	8	10	SC	G	70	EB, MC	N
Colt Creek	C3	115	R	1	12	3.0	0.16	0.25	0.20	3.2	2.4	29	10	35	50	5	0	L/M	0.35	R	L	11		0.09				11	6	5		27.6	2	0	0	0	30	2				EB, MC, JM	N
Colt Creek	C3	127	G	1	83	1.0	0.34	0.40	0.40	9.5	5.4	448	30	20	45	5	0	M	0.30	R	L	102	0.60	0.13	0.47	W/R		11	6	5	0	3.5	2	0	0	0	6	10				EB, JM	N
Colt Creek	C3	210	R	1	29	2.0	0.14	0.25	0.20	13.1	7.1	206	10	35	50	5	0	M	0.30	R	L	78		0.14				0	0	0	0	0.0	5	0	0	0	5	10	SC	P	30	MB, EB, MC	N
Colt Creek	C3	239	P	1	14		0.56	0.25	0.30	13.0	5.4	76	20	25	45	10	0	H	0.35	R	L	21	0.80	0.14	0.66	R		1	1	0	0	0.2	5	0	0	0	5	30					N
Colt Creek	C3	253	G	1	34	1.0	0.50	0.30	0.25	12.1	5.2	177	40	20	30	10	0	H	0.40	R	L	39	0.70	0.15	0.55	R		0	0	0	0	0.0	5	0	0	0	5	20				EB	N
Colt Creek	C3	287	R	1	10	1.5	0.15	0.30	0.25	8.5	8.0	80	25	25	40	10	0	M	0.25	R	M	22		0.13				0	0	0	0	0.0	5	0	0	0	5	10					N
Colt Creek	C3	297	P	1	23	0.0	0.43	0.40	0.40	9.5	3.5	81	50	15	30	5	0	M	0.30	R	L	14	0.65	0.13	0.52	R		8	2	0	0	1.1	2	0	0	0	3	40				EB, PD	N
Colt Creek	C3	320	R	1	25	2.0	0.11	0.50	0.45	8.0	7.7	193	10	35	50	5	0	M	0.35	R	L	73		0.07				1	0	1	0	0.4	2	2	0	0	4	50				MB, EB	N
Colt Creek	C3	345	P	1	20	0.0	0.55	0.40	0.50	9.7	8.7	174	30	30	35	5	0	H	0.25	R	L	56	1.50	0.07	1.43	R	Y	5	0	1	1	2.8	5	0	0	0	8	35				EB, PD	N
Colt Creek	C3	365	R	1	12	2.0	0.11	0.20	0.35	10.3	7.7	92	10	35	45	10	0	L	0.40	R	M	35		0.16				0	0	0	0	0.0	5	0	0	0	5	5					N
Colt Creek	C3	377	G	1	12	1.0	0.48	0.35	0.35	8.4	5.8	70	40	20	30	10	0	M	0.40	R	L	15	0.80	0.30	0.50	R	Y	2	2	0	0	1.3	5	10	0	0	16	40				EB	N
Colt Creek	C3	389	R	1	38	1.5	0.12	0.40	0.25	13.3	11.2	426	20	30	45	5	0	M	0.25	R	M	139		0.10				0	0	0	0	0.0	2	0	0	0	2	10				MB	N
Colt Creek	C3	427	P	1	28	0.0	0.41	0.20	0.40	11.0	10.6	297	45	35	15	5	0	H	0.25	R	L	107	1.20	0.10	1.10	R	Y	5	2	3	0	2.9	2	0	0	0	5	40				MC, EB	N
Colt Creek	C3	455	G	1	16	1.0	0.36	0.30	0.30	8.0	4.2	67	50	20	25	5	0	M	0.25	R	L	14	0.60	0.21	0.39	R		2	1	1	0	0.9	2	0	0	0	3	15					N
Colt Creek	C3	471	R	1	29	1.5	0.11	0.15	0.18	11.2	10.8	313	10	48	40	2	0	L	0.25	R	M	158		0.14				0	0	0	0	0.0	2	2	0	0	4	30				MB	N
Colt Creek	C3	500	G	1	4	1.0	0.18	0.25	0.25	6.7	5.4	22	45	25	25	5	0	M	0.25	R	L	6	0.31	0.30	0.01	R		1	1	0	0	0.7	0	0	0	0	2	50	SC	G			N
Colt Creek	C3	504	P	1	9	0.0	0.60	0.35	0.45	9.3	7.8	70	30	45	25	0	0	L	0.15	R	M	33	1.05	0.30	0.75	W/R	Y	5	2	3	0	5.1	0	0	2	0	7	40					N
Colt Creek	C3	513	R	1	6	3.0	0.18	0.25	0.20	6.5	6.2	37	15	40	45	0	0	L	0.25	R	M	16		0.13				2	0	0	0	0.0	0	0	0	0	0	0				MB, MC, PD	N
Colt Creek	C3	519	P	1	16	0.0	0.55	0.35	0.35	4.8	4.0	64	55	15	30	10	0	L	0.35	R	L	11	0.80	0.13	0.67	R		11	6	5	0	16.6	10	0	0	0	27	2				WG, EB, JM	N
Colt Creek	C3	535	G	1	26	1.5	0.27	0.30	0.35	5.6	5.3	138	55	25	15	5	0	M	0.20	R	M	36	0.50	0.36	0.14	R	Y	6	5	1	0	0.8	0	5	0	0	6	60				EB	N
Colt Creek	C3	561	O	1	20	2.0	0.15	0.25	0.25	7.0	5.5	110	15	25	30	30	0	L	0.40	R	L	29		0.15		W/R		10	5	5	0	15.9	5	0	0	0	21	40				MC, EB, JM	N
Colt Creek	C3	581	P	1	14	0.0	0.85	0.25	0.25	9.4	7.1	99	65	10	20	5	0	L	0.05	R	L	11	1.25	0.15	1.10	W	Y	11	6	5	0	24.0	2	0	5	5	36	20	SC	P	5	MC, EB, JM	N
Colt Creek	C3	595	R	1	15	1.5	0.11	0.25	0.30	12.0	7.7	116	20	20	50	10	0	L	0.35	R	M	27		0.19				0	0	0	0	0.0	0	5	0	0	5	35					N
Colt Creek	C3	610	P	1	25		0.77	0.50	0.60	8.3	7.0	175	25	15	40	20	0	M	0.40	R	L	30	1.10	0.19	0.91	R	Y	3	3	0	0	1.0	10	2	5	0	18	15					N
Colt Creek	C3	635	R	1	32	2.0	0.15	0.50	0.35	6.1	3.5	112	15	35	40	10	0	M	0.40	R	M	42		0.05				8	0	0	0	0.0	5	10	0	0	15	60				PD	N
Colt Creek	C3	667	G	1	77	1.0	0.44	0.40	0.30	7.8	5.7	439	40	30	25	5	0	H	0.25	R	L	138	0.70	0.05	0.65	W		3	2	0	0	0.2	2	0	0	2	4	5				EB, PD	N
Colt Creek	C3	744	R	1	53	2.0	0.10	0.30	0.25	13.5	10.5	557	10	35	40	15	0	M	0.40	R	M	208		0.17				0	0	0	0	0.0	10	0	0	0	10	35				MB	N
Colt Creek	C3	797	P	1	20	0.0	0.47	0.35	0.25	12.0	8.1	162	45	15	25	15	0	M	0.40	R	M	27	0.70	0.17	0.53	R		7	1	3	0	7.2	5	0	0	0	12	0				PD	N
Colt Creek	C3	817	G	1	22	1.0	0.17	0.30	0.30	11.0	8.8	194	10	25	50	15	0	M	0.45	R	M	54	0.40	0.15	0.25	R		1	0	0	0	0.0	2	2	0	0	4	15				PD	N
Colt Creek	C3	839	R	1	22	2.0	0.14	0.30	0.35	10.8	8.5	187	20	25	45	10	0	M	0.45	R	M	52		0.18				2	0	0	0	0.0	5	0	0	0	5	25				PD	N
Colt Creek	C3	861	G	1	26	1.0	0.40	0.40	0.30	9.5	5.2	135	40	25	30	5	0	L	0.25	R	M	36	0.70	0.15	0.55	R		1	0	1	0	0.3	0	5	0	0	5	5				EB, WG	N
Colt Creek	C3	887	R	1	13	3.0	0.14	0.40	0.30	13.4	4.5	59	5	25	45	25	0	L	0.40	R	M	16		0.15				0	0	0	0	0.0	15	0	0	0	15	0				EB	N
Colt Creek	C3	900	G	1	16	1.0	0.23	0.30	0.40	8.7	5.3	85	20	35	35	10	0	M	0.45	R	M	31	0.35	0.20	0.15	R		3	0	3	0	5.0	0	0	0	0	5	5				EB	N
Colt Creek	C3	916	P	1	14	0.0	0.52	0.35	0.40	8.9	5.7	80	50	15	25	10	0	M	0.25	R	M	13	0.75	0.32	0.43	R	Y	11	5	6	0	32.1	0	0	0	0	32	20				EB, JM	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel			Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	930	R	1	25	2.0	0.14	0.40	0.25	10.3	7.5	188	10	25	45	20	0	M	0.25	R	L	52		0.14				1	0	0	0	0.0	10	0	0	0	10	15				EB	N
Colt Creek	C3	955	P	1	23	1.0	0.43	0.45	0.40	9.9	5.6	129	35	25	35	5	0	M	0.20	R	L	35	0.75	0.14	0.61	R		0	0	0	0	0.0	0	0	0	0	0	25					N
Colt Creek	C3	978	R	1	13	1.5	0.08	0.35	0.40	8.5	3.7	48	10	40	45	5	0	L	0.20	R	M	21						0	0	0	0	0.0	5	0	0	0	5	10					N
Colt Creek	C3	991	G	1	6	1.0	0.12	0.30	0.45	11.5	6.9	41	20	45	33	2	0	M	0.20	R	M	19	0.30	0.12	0.18	R		1	0	1	0	1.7	2	2	0	0	6	40	SC	G		MC	N
Colt Creek	C3	997	R	1	11	2.0	0.10	0.40	0.30	17.1	6.8	74	5	35	45	15	0	L	0.35	R	M	28						0	0	0	0	0.0	5	2	0	0	7	0				MB, MC, EB	N
Colt Creek	C3	1008	O	1	33		0.35	0.40	0.30	15.0	8.0	264	50	30	15	5	0	M	0.25	R	L	82	0.55	0.13	0.42	W/R	Y	15	5	8	2	9.3	0	0	0	0	9	80				MC, EB, JM	N
Colt Creek	C3	1041	R	1	7	2.0	0.13	0.35	0.30	8.9	5.4	38	15	30	45	10	0	M	0.25	R	M	12		0.18				3	0	0	0	0.0	5	0	0	0	5	5				EB, PD	N
Colt Creek	C3	1048	G	1	8	1.0	0.18	0.35	0.30	10.6	5.8	46	40	25	35	0	0	L/M	0.20	R	L	13	0.43	0.18	0.25	R		4	0	0	0	0.0	0	0	0	2	2	2				EB, PD	N
Colt Creek	C3	1056	R	1	33	2.0	0.12	0.30	0.25	10.0	7.5	248	20	30	45	5	0	M	0.25	R	L	81		0.14				6	0	6	0	6.4	2	0	0	0	8	5				MB, EB	N
Colt Creek	C3	1089	G	1	11	1.0	0.24	0.40	0.25	8.9	9.1	100	30	25	40	5	0	M	0.25	R	L	27	0.45	0.14	0.31	R		0	0	0	0	0.0	0	0	0	0	0	5				EB	N
Colt Creek	C3	1100	P	1	5	0.0	0.39	0.35	0.35	9.4	9.4	47	50	30	18	2	0	L/M	0.15	R	L	15	0.75	0.25	0.50	R		7	2	0	0	1.3	0	5	0	0	6	5				EB, PD	N
Colt Creek	C3	1105	O	1	19	1.0	0.30	0.35	0.25	10.0	9.0	171	40	30	25	5	0	M	0.25	R	L	54	0.60	0.20	0.40	W/R	Y	20	11	7	2	18.2	2	5	0	0	25	60				EB, JM	N
Colt Creek	C3	1124	R	1	8	4.0	0.09	0.25	0.4	10.6	8.2	66	5	55	30	10	0	L	0.40	R	M	37		0.13				1	0	0	0	0.0	2	0	0	0	2	10				MB, EB	N
Colt Creek	C3	1132	P	1	13	0.0	0.45	0.3	0.4	9.4	6.0	78	20	45	30	5	0	M	0.25	R	M	37	0.95	0.13	0.82	R	Y	0	0	0	0	0.0	2	2	0	0	4	40				EB	N
Colt Creek	C3	1145	R	1	8	2.0	0.14	0.3	0.25	8.1	5.7	46	5	38	55	2	0	M	0.25	R	M	19		0.17				1	0	0	0	0.0	0	0	0	0	0	0				MB, PD, MC	N
Colt Creek	C3	1153	G	1	18	1.0	0.24	0.3	0.25	8.0	5.8	104	15	35	45	5	0	M	0.20	R	M	39	0.40	0.17	0.23	R		2	2	0	0	0.6	0	2	0	0	3	2	SC	P	?	MB, EB, MC	N
Colt Creek	C3	1171	R	1	8	5.0	0.07	0.45	0.4	12.2	11.9	95	15	38	45	2	0	M	0.25	R	M	39		0.14				0	0	0	0	0.0	0	0	0	0	0	2				MB, MC	N
Colt Creek	C3	1179	P	1	16	0.0	0.46	0.25	0.3	9.2	4.1	66	25	30	40	5	0	M	0.25	R	L	21	0.85	0.14	0.71	R		10	4	2	0	15.2	2	0	0	0	17	5				EB, PD	N
Colt Creek	C3	1195	R	1	15	3.5	0.17	0.18	0.25	7.2	5.0	75	8	37	45	10	0	M	0.25	R	L	30		0.19				0	0	0	0	0.0	5	0	0	0	5	2					N
Colt Creek	C3	1210	O	1	30	0.0	0.30	0.35	0.35	11.0	5.0	150	40	30	20	10	0	L/M	0.25	R	L	47	0.60	0.19	0.41	R	Y	20	9	8	3	19.8	2	2	0	0	24	45				JM	N
Colt Creek	C3	1240	G	1	4	1.0	0.35	0.3	0.3	10.4	4.6	18	25	25	35	15	0	L	0.25	R	M	5	0.75	0.3	0.45	W/R		1	1	0	0	3.3	5	5	0	0	13	20				MB, EB	N
Colt Creek	C3	1244	R	1	2	2.5	0.11	0.3	0.4	6.8	4.2	8	5	58	35	2	0	L	0.25	R	M	5		0.12				0	0	0	0	0.0	0	2	0	0	2	20				MB, EB	N
Colt Creek	C3	1246	P	1	8	0.0	0.32	0.25	0.2	6.1	3.2	26	35	28	35	2	0	M	0.25	R	L	8	0.60	0.12	0.48	R		2	0	2	0	10.9	2	2	0	0	15	25					N
Colt Creek	C3	1254	R	1	7	2.0	0.14	0.25	0.25	5.7	3.2	22	10	50	40	0	0	M	0.25	R	M	12		0.23				0	0	0	0	0.0	0	0	0	0	0	30					N
Colt Creek	C3	1261	G	1	5	1.0	0.24	0.3	0.35	6.3	3.2	16	25	50	25	0	0	H	0.25	R	L	8	0.35	0.23	0.12	R		2	0	2	0	13.1	0	10	0	0	23	35					N
Colt Creek	C3	1266	R	1	7	3.0	0.09	0.25	0.2	7.2	4.3	30	10	58	30	2	0	L	0.25	R	H	18		0.13				0	0	0	0	0.0	0	0	0	0	0	10				EB	N
Colt Creek	C3	1273	G	1	8	1.0	0.33	0.25	0.3	9.0	2.6	21	10	65	23	2	0	M	0.25	R	M	14	0.50	0.13	0.37	R		2	2	0	0	4.3	0	5	0	0	9	20				MB, EB	N
Colt Creek	C3	1281	R	1	17	2.5	0.06	0.3	0.3	16.2	10.4	177	10	43	45	2	0	M	0.25	R	M	81		0.07				4	0	0	0	0.0	0	0	0	0	0	5				PD, MB, MC, EB	N
Colt Creek	C3	1298	P	1	44	0.0	0.37	0.25	0.25	7.5	5.0	220	40	20	35	5	0	L	0.25	R	L	49	0.85	0.07	0.78	W/R	Y	11	5	5	1	10.7	0	5	0	0	16	30				EB, PD, JM	N
Colt Creek	C3	1342	G	1	29	1.0	0.53	0.4	0.4	7.1	4.6	133	20	33	45	2	0	M	0.25	R	L	48	0.80	0.19	0.61	R	Y	11	6	5	0	13.9	0	10	0	0	24	30				EB, PD, JM	N
Colt Creek	C3	1371	R	1	7	2.0	0.14	0.35	0.25	7.9	2.9	20	15	25	60	0	0	H	0.25	R	L	6		0.15				0	0	0	0	0.0	0	0	0	0	0	75				EB	N
Colt Creek	C3	1378	G	1	13	1.0	0.34	0.3	0.35	8.7	4.2	54	45	20	35	0	0	M	0.25	R	L	12	0.60	0.15	0.45	R		1	0	1	0	1.3	0	2	0	0	3	40				EB	N
Colt Creek	C3	1391	R	1	44	2.0	0.11	0.4	0.3	7.5	2.5	110	10	35	55	0	0	M	0.25	R	L	42		0.07				0	0	0	0	0.0	0	0	0	0	0	50				EB	N
Colt Creek	C3	1435	G	1	7	0.2	0.08	0.8	0.7	13.0	4.9	34	5	40	50	5	0	M	0.15	R	M	15	0.62	0.07	0.55	R	Y	5	4	2	0	7.6	0	10	0	0	18	35				EB	N
Colt Creek	C3	1442	R	1	23	2.0	0.13	0.55	0.35	6.7	2.8	64	10	35	53	2	0	M	0.20	R	L	25		0.1				1	1	0	0	0.5	0	0	0	0	0	2	SC	P		EB	N
Colt Creek	C3	1465	P	1	13	0.0	0.52	0.25	0.45	5.6	5.0	65	30	10	55	5	0	M	0.25	R	L	9	1.05	0.1	0.95	R	Y	2	1	1	0	4.2	0	5	2	25	36	25					N
Colt Creek	C3	1478	R	1	20	2.0	0.13	0.2	0.3	14.1	7.4	147	15	30	45	10	0	M/H	0.30	R	L	48		0.18				3	0	0	0	0.0	0	0	0	0	0	2				EB, PD	N
Colt Creek	C3	1498	P	1	30	0.0	0.30	0.35	0.2	10.2	6.9	207	50	20	25	5	0	H	0.20	R	L	45	1.10	0.18	0.92	R	Y	4	3	1	0	2.8	2	5	2	0	12	35					N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally											Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	1528	R	1	9	2.0	0.14	0.3	0.45	13.5	9.6	86	10	35	45	10	0	H	0.30	R	L	33		0.15				0	0	0	0	0.0	0	0	0	0	0	2				MB	N
Colt Creek	C3	1537	P	1	30	0.0	0.83	0.3	0.4	11.0	9.0	270	60	15	20	5	0	M	0.15	R	L	44	1.25	0.15	1.10	R	Y	9	6	1	0	2.8	5	0	0	0	8	50				EB, PD	N
Colt Creek	C3	1567	R	1	22	1.5	0.12	0.3	0.4	7.5	5.0	109	10	40	45	5	0	M	0.25	R	M	47		0.12				0	0	0	0	0.0	2	5	0	0	7	40					N
Colt Creek	C3	1589	G	1	13	1.0	0.15	0.3	0.3	6.8	4.0	52	40	25	30	5	0	M	0.20	R	L	14	0.42	0.13	0.29	R		2	0	0	0	0.0	0	10	0	0	10	50				PD	N
Colt Creek	C3	1602	R	1	8	4.0	0.13	0.3	0.45	10.9	2.5	20	5	40	50	5	0	M	0.25	R	M	8		0.15				1	0	0	0	0.0	2	2	0	0	4	2				MB, EB, MC, PD	N
Colt Creek	C3	1610	G	1	11	1.0	0.38	0.35	0.35	6.7	4.3	47	15	35	48	2	0	M	0.20	R	M	18	0.65	0.15	0.50	R		7	0	0	0	0.0	0	0	0	0	0	2				EB, PD	N
Colt Creek	C3	1621	R	1	2	3.5	0.07	0.35	0.35	9.7	6.8	14	5	40	55	0	0	M	0.20	R	M	6		0.1				0	0	0	0	0.0	0	0	0	0	0	0				MB, EB, MC	N
Colt Creek	C3	1623	P	1	4	0.0	0.45	0.35	0.3	9.4	5.9	24	10	40	48	2	0	M	0.20	R	M	10	0.60	0.1	0.50	R		1	1	0	0	1.3	0	0	0	0	1	5				EB, BC	N
Colt Creek	C3	1627	R	1	3	7.5	0.08	0.35	0.4	9.0	5.6	17	5	35	50	10	0	M	0.25	R	L	6		0.1				1	1	0	0	0.9	2	0	0	0	3	2				MB, EB, MC	N
Colt Creek	C3	1630	P	1	9	0.0	0.46	0.3	0.2	7.7	7.1	64	35	35	25	5	0	L	0.20	R	M	23	0.70	0.09	0.61	R		3	1	1	0	1.8	0	0	0	0	2	0				PD	N
Colt Creek	C3	1639	R	1	4	4.5	0.14	0.2	0.1	13.5	7.5	30	5	40	53	2	0	L	0.20	R	M	13		0.14				1	0	0	0	0.0	0	0	0	0	0	10				MB, EB, MC, PD	N
Colt Creek	C3	1643	P	1	23	0.0	0.44	0.35	0.45	12.9	7.0	161	45	10	40	5	0	M	0.25	R	L	20	0.85	0.14	0.71	R		3	1	0	0	0.6	2	0	0	0	3	5				EB	N
Colt Creek	C3	1666	R	1	8	1.0	0.28	0.25	0.35	13.0	5.8	46	10	40	45	5	0	L	0.20	R	M	20	0.50	0.18	0.32			1	1	0	0	1.3	0	0	0	0	0	2				EB	N
Colt Creek	C3	1674	R	1	13	3.5	0.09	0.3	0.35	11.6	6.8	88	5	50	35	10	0	M	0.30	R	M	46		0.12				0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Colt Creek	C3	1687	P	1	16	0.0	0.43	0.6	0.3	10.6	7.6	122	60	25	15	0	0	M	0.25	R	L	31	1.00	0.12	0.88	R		8	6	2	0	6.6	0	5	2	0	14	0				EB	N
Colt Creek	C3	1703	G	1	15	1.5	0.32	0.3	0.3	7.9	4.7	71	20	30	48	2	0	M	0.15	R	L	23	0.60	0.1	0.50	R		1	1	0	0	0.4	2	0	0	0	2	30				EB	N
Colt Creek	C3	1718	R	1	13	2.5	0.12	0.25	0.25	10.5	8.8	114	20	30	40	10	0	L	0.25	R	M	37		0.18				0	0	0	0	0.0	2	0	0	0	2	0				MB, EB, MC	N
Colt Creek	C3	1731	G	1	40	1.0	0.21	0.35	0.4	7.5	4.5	180	20	25	50	5	0	M	0.25	R	L	50	0.80	0.18	0.62	R		3	3	0	0	1.3	2	0	0	0	3	2				EB	N
Colt Creek	C3	1771	R	1	13	4.0	0.08	0.35	0.35	11.8	10.2	133	5	50	40	5	0	H	0.25	R	L	69		0.14				0	0	0	0	0.0	2	0	0	0	2	2				EB	N
Colt Creek	C3	1784	G	1	48	1.0	0.16	0.35	0.2	7.5	5.4	259	25	30	35	10	0	H	0.30	R	L	83	0.50	0.14	0.36	R		3	0	2	0	0.5	2	0	0	2	5	5				PD	N
Colt Creek	C3	1832	R	1	21	2.0	0.14	0.35	0.25	9.6	5.5	116	20	20	45	15	0	M	0.30	R	L	26		0.14				3	0	0	0	0.0	5	0	0	0	5	2				PD	N
Colt Creek	C3	1853	G	1	27	1.0	0.40	0.25	0.3	7.1	4.9	132	25	30	35	10	0	M	0.30	R	L	42	0.50	0.14	0.36	R		3	1	1	0	1.2	0	0	0	2	3	5				PD	N
Colt Creek	C3	1880	R	1	40	2.0	0.13	0.2	0.25	13.7	5.3	210	10	30	40	20	0	M	0.30	R	M	68		0.13				0	0	0	0	0.0	0	0	0	0	0	5				EB	N
Colt Creek	C3	1920	P	1	16	0.0	0.42	0.3	0.3	9.3	9.4	150	30	50	18	2	0	M	0.15	R	M	77	0.85	0.13	0.72	R	Y	0	0	0	0	0.0	0	0	0	0	0	40					N
Colt Creek	C3	1936	R	1	38	2.0	0.06	0.1	0.35	9.2	8.7	331	5	50	35	10	0	M	0.30	R	M	172		0.1				0	0	0	0	0.0	0	2	0	0	2	30				MB	N
Colt Creek	C3	1974	P	1	37	0.0	0.61	0.35	0.4	6.2	4.3	159	30	45	23	2	0	M	0.15	R	M	74	0.80	0.1	0.70	R	Y	7	3	2	0	2.5	0	0	0	2	4	40				EB, PD	N
Colt Creek	C3	2011	R	1	20	2.0	0.08	0.3	0.2	10.5	9.9	198	13	50	35	2	0	M/H	0.20	R	M	103		0.13				0	0	0	0	0.0	0	0	0	0	0	5					N
Colt Creek	C3	2031	P	1	15	0.0	0.55	0.3	0.35	8.2	5.9	89	40	35	23	2	0	M	0.15	R	M	32	0.75	0.13	0.62	R	Y	11	5	6	0	21.0	0	5	0	0	26	30				EB, JM	N
Colt Creek	C3	2046	G	1	17	1.0	0.50	0.35	0.6	5.3	3.5	59	15	30	55	0	0	L	0.15	R	M	20	0.65	0.07	0.58	R	Y	7	5	2	0	7.4	0	15	0	0	22	40				MB, EB	N
Colt Creek	C3	2063	R	1	22	3.0	0.08	0.15	0.25	17.3	5.6	123	5	60	30	5	0	L	0.20	R	H	76		0.15				0	0	0	0	0.0	2	2	0	0	4	5				MB, EB, MC	N
Colt Creek	C3	2085	G	1	47	1.0	0.20	0.35	0.4	10.4	5.1	240	25	20	45	10	0	M	0.30	R	L	54	0.45	0.15	0.30	R		1	0	1	0	0.9	0	0	0	2	3	0				EB	N
Colt Creek	C3	2132	P	1	7	0.0	0.46	0.4	0.5	7.2	4.9	34	60	15	25	0	0	M	0.25	R	L	6	0.65	0.3	0.35	R	Y	7	3	4	0	15.0	0	2	0	0	17	50					N
Colt Creek	C3	2139	R	1	6	5.0	0.15	0.3	0.35	7.5	2.1	13	5	35	50	10	0	L	0.35	R	L	5		0.18				0	0	0	0	0.0	5	0	0	0	5	2					N
Colt Creek	C3	2145	P	1	8	0.0	0.48	0.2	0.3	6.0	4.8	38	33	25	40	2	0	H	0.25	R	L	11	0.75	0.18	0.57	R	Y	5	3	2	0	6.3	2	2	0	0	10	30	SC	P		EB	N
Colt Creek	C3	2153	G	1	15	1.0	0.15	0.3	0.35	4.9	3.3	50	5	60	30	5	0	M	0.20	R	M	31	0.33	0.21	0.12	R		0	0	0	0	0.0	0	0	0		0	5					N
Colt Creek	C3	2168	R	1	25	2.0	0.17	0.4	0.35	15.5	2.2	55	5	50	40	5	0	L	0.20	R	M	29		0.1				0	0	0	0	0.0	0	2	0	0	2	30					N
Colt Creek	C3	2193	G	1	24	1.0	0.40	0.25	0.35	10.5	3.8	90	23	30	45	2	0	M	0.15	R	L	29	0.60	0.1	0.50	R		4	0	4	0	1.9	0	2	0	0	4	20					N
Colt Creek	C3	2217	R	1	16	2.0	0.13	0.45	0.3	15.4	8.0	128	5	30	45	20	0	M	0.35	R	M	42		0.21				0	0	0	0	0.0	10	0	0	0	10	2				EB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally											Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	2233	G	1	21	1.0	0.21	0.5	0.35	9.7	4.7	99	13	40	45	2	0	M	0.25	R	L	42	0.40	0.21	0.19	R		1	0	1	0	1.4	2	0	0	0	3	5				EB	N
Colt Creek	C3	2254	P	1	9	0.0	0.59	0.45	0.45	7.8	5.8	52	60	26	15	0	0	L	0.15	R	L	14	1.10	0.3	0.80	R	Y	12	6	5	1	32.9	0	0	0	0	33	40				EB, JM	N
Colt Creek	C3	2263	G	1	55	1.0	0.31	0.4	0.3	7.0	2.9	160	15	35	50	0	0	L	0.20	R	M	61	0.40	0.1	0.30	R		1	0	1	0	4.4	0	0	0	0	4	40				MB, EB, MC	N
Colt Creek	C3	2318	R	1	20	1.5	0.11	0.35	0.2	9.7	5.1	102	20	35	43	2	0	H	0.25	R	L	38		0.12				2	0	0	0	0.0	0	0	0	0	0	5	SC	P		EB, PD	N
Colt Creek	C3	2338	G	1	38	1.0	0.17	0.25	0.2	8.6	3.7	141	10	50	33	2	0	M	0.12	R	M	73	0.25	0.12	0.13	R		0	0	0	0	0.0	0	0	0	0	0	40					N
Colt Creek	C3	2376	R	1	70	2.0	0.10	0.25	0.5	9.0	7.4	518	10	55	33	2	0	M	0.20	R	M	295		0.16				0	0	0	0	0.0	0	0	0	0	0	15				EB	N
Colt Creek	C3	2446	G	1	8	1.0	0.20	0.3	0.3	4.3	3.3	26	20	35	40	5	0	M	0.20	R	L	10	0.45	0.16	0.29	R		5	3	1	0	8.6	0	2	0	0	11	10				EB, PD	N
Colt Creek	C3	2454	R	1	26	2.5	0.09	0.35	0.3	7.7	3.3	86	10	30	55	5	0	L	0.25	R	M	29		0.09				0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Colt Creek	C3	2480	P	1	14	0.0	0.46	0.35	0.4	8.6	4.0	56	25	30	43	2	0	M	0.25	R	L	18	0.60	0.09	0.51	R		0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Colt Creek	C3	2494	R	1	8	2.0	0.10	0.3	0.3	10.5	5.1	40	10	25	60	5	0	M	0.25	R	L	12		0.14				0	0	0	0	0.0	2	0	0	0	2	0				MB, EB	N
Colt Creek	C3	2502	G	1	16	1.5	0.40	0.4	0.2	9.8	5.0	80	10	25	65	0	0	M	0.25	R	L	23	0.40	0.14	0.26	R		5	0	5	0	4.4	0	0	0	0	4	10				EB	N
Colt Creek	C3	2518	R	1	21	2.0	0.10	0.3	0.2	7.3	5.2	109	8	35	55	2	0	M	0.20	R	M	42		0.11				0	0	0	0	0.0	2	0	0	0	2	30					N
Colt Creek	C3	2539	P	1	20	0.0	0.44	0.4	0.5	4.5	4.5	90	40	20	35	5	0	M	0.15	R	L	20	0.80	0.11	0.69	R	Y	4	0	3	0	1.8	0	0	0	0	2	40					N
Colt Creek	C3	2559	G	1	7	1.0	0.29	0.35	0.3	8.4	2.9	20	30	25	43	2	0	M	0.15	R	L	6	0.48	0.08	0.40	R		2	1	0		1.5	0	0	0	0	1	5				MB, EB	N
Colt Creek	C3	2566	R	1	47	2.0	0.08	0.4	0.25	10.3	4.7	221	8	55	35	2	0	M	0.20	R	L	126		0.12				0	0	0	0	0.0	0	0	0	0	0	10				MB, EB	N
Colt Creek	C3	2613	P	1	13	0.0	0.26	0.25	0.35	9.4	5.9	77	40	25	35	0	0	M	0.20	R	L	21	0.75	0.12	0.63	R		3	1	1	0	1.8	0	5	0	0	7	5				ME, EB, PD	N
Colt Creek	C3	2626	R	1	6	2.5	0.09	0.45	0.35	10.9	8.2	49	10	25	45	10	0	M	0.40	R	L	14		0.2				0	0	0	0	0.0	0	0	0	0	0	5				MB, EB, MC	N
Colt Creek	C3	2632	G	1	18	1.0	0.40	0.32	0.35	9.1	4.6	83	50	25	23	2	0	M	0.20	R	L	22	0.55	0.1	0.45	R		3	0	2	0	5.1	0	0	0	0	5	40				MC, EB, PD	N
Colt Creek	C3	2650	R	1	14	2.0	0.05	0.25	0.3	9.1	6.9	97	30	25	35	10	0	M	0.30	R	L	26		0.15				0	0	0	0	0.0	5	0	0	0	5	10				MB	N
Colt Creek	C3	2664	G	1	23	1.0	0.22	0.25	0.25	7.6	3.9	90	50	25	15	10	0	L	0.30	R	L	23	0.40	0.15	0.25	R		1	0	0	1	0.8	2	0	0	0	3	2	SC	P		EB	N
Colt Creek	C3	2687	R	1	26	2.0	0.13	0.35	0.25	5.8	2.6	68	10	35	50	5	0	M	0.25	R	L	26		0.17				0	0	0	0	0.0	0	0	0	0	0	5				EB	N
Colt Creek	C3	2713	G	1	5	1.0	0.22	0.5	0.35	5.5	2.6	13	40	20	40	0	0	M	0.20	R	L	3	0.50	0.17	0.33	R		0	0	0	0	0.0	0	0	0	0	0	15				EB, MC	N
Colt Creek	C3	2718	R	1	4	6.5	0.10	0.3	0.4	6.5	4.7	19	10	35	45	10	0	M/H	0.30	R	M	7		0.12				0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Colt Creek	C3	2722	P	1	8	0.0	0.25	0.4	0.4	6.7	5.5	44	60	15	23	2	0	M	0.15	R	L	7	0.52	0.12	0.40	R		2	1	1	0	3.1	0	5	0	0	8	20				EB	N
Colt Creek	C3	2730	R	1	20	4.0	0.18	0.2	0.4	8.6	1.8	35	10	35	53	2	0	M	0.20	R	L	13		0.2				0	0	0	0	0.0	2	0	0	0	2	5				EB	N
Colt Creek	C3	2750	G	1	25	1.0	0.18	0.25	0.3	11.8	2.6	64	60	25	13	2	0	L/M	0.12	R	L	16	0.60	0.2	0.40	R		12	6	6	0	9.4	0	5	0	0	14	30				EB, JM	N
Colt Creek	C3	2775	P	1	20	0.0	0.61	0.25	0.4	12.0	4.7	93	30	20	50	0	0	M	0.25	R	L	21	0.80	0.05	0.75	R		10	4	4	0	6.5	0	0	0	0	6	30				MB, MC, PD, JM	N
Colt Creek	C3	2795	R	1	22	3.5	0.05	0.15	0.1	16.2	16.1	354	10	35	55	5	0	M	0.25	R	M	136		0.1				0	0	0	0	0.0	2	0	0	0	2	5				MB, MC, EB	N
Colt Creek	C3	2817	P	1	23	0.0	0.71	0.35	0.15	9.8	6.1	140	40	20	30	10	0	M	0.30	R	L	31	1.10	0.1	1.00	R		3	0	2	0	2.0	0	0	2	0	4	0				PD	N
Colt Creek	C3	2840	G	1	11	1.0	0.16	0.25	0.25	10.3	4.0	43	13	35	50	2	0	M	0.25	R	L	17	0.20	0.05	0.15	R		0	0	0	0	0.0	2	0	0	0	2	2				EB	N
Colt Creek	C3	2851	P	1	12	0.0	0.29	0.3	0.25	10.0	4.6	55	60	23	15	2	0	M	0.20	R	L	13	0.50	0.19	0.31	R		4	1	2	1	13.0	0	0	0	0	13	30					N
Colt Creek	C3	2863	R	1	6	3.0	0.07	0.4	0.25	11.0	7.6	46	10	53	35	2	0	L	0.15	R	H	25		0.13				0	0	0	0	0.0	0	0	0	0	0	5				EB	N
Colt Creek	C3	2869	P	1	10	0.0	0.46	0.6	0.35	9.0	7.6	76	60	28	10	2	0	L	0.10	R	L	22	1.10	0.13	0.97	R		1	1	0	0	1.0	0	0	2	0	3	5				EB	N
Colt Creek	C3	2879	G	1	19	1.5	0.18	0.45	0.3	11.7	5.3	101	10	30	55	5	0	M	0.20	R	M	34	0.35	0.13	0.22	R		0	0	0	0	0.0	2	0	0	0	2	25					N
Colt Creek	C3	2898	R	1	8	6.0	0.07	0.25	0.4	11.2	10.5	84	10	30	40	20	0	M	0.30	R	L	27		0.08				0	0	0	0	0.0	2	0	0	0	2	5					N
Colt Creek	C3	2906	P	1	48	0.0	0.88	0.2	0.3	8.1	5.6	266	25	40	35	0	0	M	0.20	R	L	112	1.25	0.08	1.17	BD	Y	12	5	6	1	7.6	0	0	2	0	10	30				EB, JM	N
Colt Creek	C3	2954	R	1	12	4.0	0.07	0.4	0.3	16.5	3.1	37	5	33	60	2	0	M	0.20	R	L	13		0.11				0	0	0	0	0.0	2	2	0	0	4	25				MB,EB,MC	N
Colt Creek	C3	2966	G	1	32	1.5	0.13	0.4	0.45	7.9	3.9	125	10	50	35	5	0	M/H	0.20	R	L	65	0.75	0.11	0.64	R	Y	0	0	0	0	0.0	0	0	0	0	0	40				EB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally											Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	2998	R	1	4	5.0	0.13	0.35	0.35	12.8	10.8	43	5	40	55	10	0	M	0.30	R	L	19		0.12				1	0	0	0	0.0	0	0	0	0	0	30				MB, EB, MC, PD	N
Colt Creek	C3	3002	G	1	10	1.0	0.12	0.3	0.4	10.3	4.8	48	8	40	50	2	0	M	0.25	R	M	20	0.45	0.12	0.33	W/R		0	0	0	0	0.0	0	0	0	0	0	15				MB, EB, MC	N
Colt Creek	C3	3012	R	1	12	2.0	0.11	0.25	0.35	7.5	4.2	50	10	25	40	25	0	M	0.40	R	L	14		0.11				1	0	0	0	0.0	0	10	0	0	10	2				EB, PD	N
Colt Creek	C3	3024	G	1	13	1.0	0.52	0.2	0.35	11.7	2.6	34	5	55	38	2	0	M	0.15	R	M	19	0.60	0.11	0.49	R		1	1	0	0	0.4	0	10	0	0	10	10				EB	N
Colt Creek	C3	3037	R	1	5	2.5	0.14	0.2	0.35	11.5	2.4	12	5	45	40	10	0	M	0.30	R	M	6		0.12				0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Colt Creek	C3	3042	P	1	26	0.0	0.59	0.4	0.4	14.2	6.3	163	33	25	40	2	0	M	0.20	R	L	45	0.70	0.12	0.58	R	Y	0	0	0	0	0.0	2	2	0	0	4	40				EB	N
Colt Creek	C3	3068	R	1	19	4.0	0.10	0.35	0.25	10.2	6.3	120	5	30	45	20	0	M	0.40	R	M	39		0.05				0	0	0	0	0.0	10	0	0	0	10	5				EB	N
Colt Creek	C3	3087	G	1	19	1.0	0.35	0.4	0.3	7.8	5.3	101	10	30	55	5	0	M	0.25	R	M	34	0.55	0.05	0.50	W		1	1	0	0	0.1	2	2	0	0	4	40					N
Colt Creek	C3	3106	R	1	17	2.5	0.13	0.4	0.4	8.2	5.1	87	5	30	50	15	0	M	0.30	R	L	29		0.16				1	0	0	0	0.0	5	0	0	0	5	10				MB, EB, MC, PD	N
Colt Creek	C3	3123	G	1	26	1.0	0.19	0.4	0.45	6.2	4.8	125	10	35	50	15	0	M	0.30	R	H	47	0.45	0.16	0.29	R		4	2	2	0	1.1	5	0	0	0	6	20				EB	N
Colt Creek	C3	3149	P	1	8	0.0	0.28	0.35	0.35	6.7	4.6	37	18	55	25	2	0	M	0.15	R	H	21	0.85	0.24	0.61	R	Y	12	3	0	0	3.7	0	2	0	0	6	40				EB, PD	N
Colt Creek	C3	3157	G	1	13	1.0	0.15	0.35	0.25	7.5	4.9	63	10	25	63	2	0	M	0.25	R	L	18	0.50	0.24	0.26	R		2	1	1	0	2.1	0	5	0	0	7	40				EB	N
Colt Creek	C3	3170	R	1	17	1.5	0.11	0.25	0.25	9.7	7.0	119	5	60	25	10	0	M	0.30	R	M	73		0.2				1	0	0	0	0.0	5	0	0	0	5	2				PD	N
Colt Creek	C3	3187	G	1	25	1.0	0.21	0.3	0.3	12.3	3.3	83	10	30	50	10	0	M	0.35	R	M	27	0.55	0.2	0.35	W/R		1	1	0	0	1.1	5	0	0	0	6	30					N
Colt Creek	C3	3212	R	1	50	2.0	0.12	0.3	0.15	11.1	8.6	430	10	35	45	10	0	M	0.30	R	M	162		0.19				0	0	0	0	0.0	5	0	0	0	5	20				EB	N
Colt Creek	C3	3262	G	1	14	1.0	0.21	0.35	0.35	9.3	6.3	88	10	35	50	5	0	M	0.20	R	M	33	0.30	0.19	0.11	R		0	0	0	0	0.0	2	0	0	0	2	40				EB	N
Colt Creek	C3	3276	P	1	13	0.0	0.25	0.35	0.35	12.2	8.0	104	43	20	35	2	0	M	0.20	R	L	23	0.45	0.25	0.20	R		1	0	1	0	1.0	0	2	0	0	3	30				MB, EB	N
Colt Creek	C3	3289	R	1	22	4.0	0.13	0.3	0.4	15.8	6.5	143	5	30	55	10	0	M	0.25	R	M	48		0.15				2	0	0	0	0.0	2	0	0	0	2	5				MB, PD	N
Colt Creek	C3	3311	G	1	26	1.0	0.53	0.25	0.3	5.6	5.4	140	20	30	40	10	0	M/H	0.30	R	L	45	0.65	0.15	0.50	R	Y	1	0	1	0	0.7	0	0	0	0	1	60					N
Colt Creek	C3	3337	R	1	16	4.0	0.12	0.4	0.35	10.0	8.5	136	10	25	45	20	0	M	0.40	R	M	38		0.2				0	0	0	0	0.0	10	0	0	0	10	5				EB	N
Colt Creek	C3	3353	G	1	20	1.0	0.23	0.3	0.3	8.1	4.3	86	10	30	55	5	0	M	0.25	R	H	29	0.45	0.2	0.25	R		1	0	1	0	0.8	2	0	0	0	3	10					N
Colt Creek	C3	3373	R	1	56	2.0	0.14	0.35	0.35	6.5	5.2	291	15	50	25	10	0	M	0.35	R	H	150		0.1				0	0	0	0	0.0	2	0	0	0	2	45					N
Colt Creek	C3	3429	G	1	14	1.0	0.19	0.35	0.25	7.4	4.7	66	13	60	25	2	0	M	0.20	R	H	40	0.40	0.1	0.30	R		1	1	0	0	1.4	0	0	0	0	1	30				EB	N
Colt Creek	C3	3443	R	1	11	2.0	0.22	0.3	0.5	8.7	3.8	42	5	30	55	10	0	M	0.35	R	L	14		0.2				12	0	0	0	0.0	5	0	0	0	5	30				EB, PD	N
Colt Creek	C3	3454	G	1	13	1.0	0.42	0.45	0.45	8.5	5.2	68	20	35	40	5	0	M	0.25	R	L	25	0.90	0.2	0.70	R	Y	0	0	0	0	0.0	2	0	0	0	2	60				EB	N
Colt Creek	C3	3467	R	1	43	4.0	0.14	0.35	0.3	8.4	4.3	185	15	25	45	15	0	M	0.35	R	M	51		0.2				12	0	0	0	0.0	5	0	0	0	5	20				EB, PD	N
Colt Creek	C3	3510	P	1	7	0.0	0.57	0.35	0.5	8.5	5.6	39	15	35	45	5	0	M	0.25	R	M	15	1.00	0.2	0.80	R	Y	11	6	5	0	33.8	2	0	2	0	38	40				EB, JM	N
Colt Creek	C3	3517	R	1	71	2.0	0.14	0.2	0.3	9.1	4.3	305	10	35	45	10	0	M	0.30	R	M	115		0.18				0	0	0	0	0.0	2	0	0	0	2	2				EB	N
Colt Creek	C3	3588	G	1	44	1.0	0.34	0.35	0.35	15.8	3.2	141	25	20	40	15	0	M	0.35	R	M	32	0.65	0.18	0.47	R	Y	12	5	5	0	8.2	5	0	0	0	13	40				EB, JM	N
Colt Creek	C3	3632	R	1	20	3.5	0.09	0.3	0.35	19.4	6.4	127	10	35	45	10	0	M	0.40	R	L	48		0.13				0	0	0	0	0.0	5	0	0	0	5	0	SC	G		MB	N
Colt Creek	C3	3652	P	1	11	1.0	0.21	0.35	0.3	14.7	5.7	63	10	30	58	2	0	M	0.30	R	L	21	0.20	0.13	0.07	R		0	0	0	0	0.0	2	0	0	0	2	0				EB	N
Colt Creek	C3	3663	P	1	25	0.0	0.83	0.4	0.25	8.0	7.0	175	60	10	25	5	0	M	0.15	R	L	20	1.00	0.13	0.87	R	Y	12	4	5	2	9.1	0	0	2	0	11	30				JM	N
Colt Creek	C3	3688	R	1	12	3.0	0.13	0.4	0.4	14.4	6.1	73	10	25	45	20	0	M	0.45	R	L	20		0.23				1	0	0	1	3.1	10	0	0	0	13	5					N
Colt Creek	C3	3700	G	1	23	1.0	0.23	0.35	0.25	4.8	4.0	92	20	25	45	10	0	M	0.35	R	M	25	0.60	0.23	0.37	R		4	0	1	0	1.1	5	2	0	0	8	15				EB, PD	N
Colt Creek	C3	3723	R	1	38	2.5	0.12	0.35	0.45	5.4	3.7	141	5	30	50	15	0	M/H	0.35	R	L	46		0.15				3	0	1	0	0.2	5	0	0	0	5	10				EB, PD	N
Colt Creek	C3	3761	G	1	20	1.0	0.32	0.3	0.3	7.1	3.1	62	15	25	50	10	0	H	0.20	R	L	17	0.45	0.15	0.30	R		1	0	0	1	4.8	2	0	0	0	7	40					N
Colt Creek	C3	3781	R	1	59	2.5	0.08	0.35	0.4	11.7	5.0	295	10	40	40	10	0	M	0.25	R	M	125		0.15				0	0	0	0	0.0	5	0	0	0	5	30				EB	N
Colt Creek	C3	3840	P	1	13	0.0	0.32	0.25	0.2	8.5	5.4	70	15	35	50	0	0	M	0.20	R	M	27	1.00	0.15	0.85	R	Y	12	5	5	2	25.3	0	0	2	0	27	25				JM	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

									Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally										Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)		Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	3853	G	1	7	1.0	0.20		0.3	0.3	11.1	3.7	26		20	30	45	5	0	M	0.25	R	M	8	0.30	0.15	0.15	R		0	0	0	0	0.0	2	0	0	0	2	0					N
Colt Creek	C3	3860	R	1	14	3.5	0.09		0.35	0.45	13.9	6.9	96		10	40	45	5	0	M	0.25	R	M	41		0.1				0	0	0	0	0.0	2	0	0	0	2	10					N
Colt Creek	C3	3874	P	1	8	0.0	0.36		0.3	0.2	10.2	9.6	77		40	25	30	5	0	M	0.20	R	M	21	0.75	0.1	0.65	R		2	0	0	0	0.0	0	2	0	0	2	35				EB, PD	N
Colt Creek	C3	3882	R	1	55	3.0	0.12		0.4	0.3	4.9	3.3	182		8	30	50	12	0	M	0.30	R	L	60		0.1				12	0	0	0	0.0	5	2	0	0	7	40				EB,PD,MB,MC	N
Colt Creek	C3	3937	P	1	8	0.0	0.45		0.3	0.35	10.9	6.4	51		30	40	25	5	0	H	0.20	R	L	21	0.80	0.1	0.70	R	Y	12	5	6	0	27.8	2	0	0	0	30	40				WG, EB, JM	N
Colt Creek	C3	3945	R	1	18	2.0	0.11		0.35	0.25	11.3	5.5	98		5	35	55	5	0	M	0.25	R	M	38		0.14				0	0	0	0	0.0	0	0	0	0	0	10					N
Colt Creek	C3	3963	G	1	12	1.0	0.31		0.3	0.3	10.2	2.9	34		10	30	60	0	0	M	0.25	R	M	11	0.43	0.14	0.29	R		2	1	1	0	8.8	0	0	0	0	9	5					N
Colt Creek	C3	3975	R	1	25	3.0	0.12		0.3	0.4	10.1	2.3	58		15	30	40	5	0	M	0.15	R	M	19		0.16				0	0	0	0	0.0	0	0	0	0	0	0				EB	N
Colt Creek	C3	4000	G	1	31	1.0	0.25		0.3	0.25	10.1	3.9	121		15	45	30	10	0	M	0.27	R	M	57	0.35	0.16	0.19	R		1	0	0	0	0.0	0	0	0	0	0	2				EB, PD	N
Colt Creek	C3	4031	R	1	8	2.5	0.12		0.35	0.35	11.7	7.3	58		10	35	55	0	0	M	0.25	R	M	22		0.15				4	0	0	0	0.0	0	0	0	0	0	5				EB, PD	N
Colt Creek	C3	4039	P	1	20	0.0	0.30		0.35	0.4	9.6	5.6	112		40	30	20	10	0	H	0.30	R	L	35	0.55	0.15	0.40	R		5	0	4	0	2.5	0	0	0	0	3	5				EB, PD	N
Colt Creek	C3	4059	R	1	10	2.0	0.17		0.4	0.25	9.3	3.0	30		5	30	45	20	0	M	0.35	R	L	10		0.16				0	0	0	0	0.0	0	0	0	0	0	0				EB, MB, MC	N
Colt Creek	C3	4069	P	1	10	0.0	0.37		0.5	0.35	5.2	4.1	41		35	30	25	10	0	H	0.30	R	L	13	0.65	0.16	0.49	R		2	1	1	0	2.4	0	0	0	0	2	5				EB	N
Colt Creek	C3	4079	R	1	49	2.5	0.16		0.4	0.25	7.1	3.7	179		15	30	35	20	0	M/H	0.40	R	M	57		0.12				5	0	0	0	0.0	10	0	0	0	10	2				EB, MC, PD	N
Colt Creek	C3	4128	P	1	6	0.0	0.39		0.25	0.25	16.2	8.2	49		15	30	45	10	0	M	0.27	R	M	16	0.60	0.12	0.48	R		5	0	0	0	0.0	5	0	0	0	5	20				EB, MC, PD	N
Colt Creek	C3	4134	R	1	8	2.0	0.11		0.2	0.25	16.1	3.4	27		5	30	45	20	0	M	0.30	R	L	9		0.13				12	6	6	0	55.1	0	0	0	0	55	20				MC, EB, JM	N
Colt Creek	C3	4142	O	1	40	1.0	0.34		0.25	0.25	12.0	3.5	140		30	25	30	15	0	M	0.30	R	L	38	0.35	0.13	0.22	R/W		20	5	6	0	11.7	5	5	0	0	22	45				EB, PD, JM	N
Colt Creek	C3	4182	R	1	26	3.5	0.12		0.3	0.25	7.6	5.5	142		5	20	50	25	0	M	0.35	R	L	33		0.16				0	0	0	0	0.0	10	0	0	0	10	2				MB	N
Colt Creek	C3	4208	P	1	6	0.0	0.38		0.25	0.45	12.2	3.7	22		20	30	40	10	0	M	0.30	R	L	7	0.50	0.16	0.34	R		5	3	2	0	29.3	0	0	0	0	29	10				MC, EB	N
Colt Creek	C3	4214	R	1	4	3.0	0.12		0.35	0.4	10.2	9.4	38		10	15	45	30	0	M	0.45	R	L	7		0.12				2	0	0	0	0.0	10	0	0	0	10	2				EB, PD	N
Colt Creek	C3	4218	P	1	11	0.0	0.70		0.3	0.3	9.0	6.0	66		30	20	45	5	0	M	0.30	R	L	15	1.00	0.12	0.88	R	Y	11	5	5	0	12.5	0	0	2	0	15	40				EB, PD, JM	N
Colt Creek	C3	4229	G	1	11	1.0	0.15		0.3	0.3	8.9	2.9	32		15	30	45	10	0	M	0.40	R	L	10	0.45	0.12	0.33	R	Y	11	3	6	0	30.6	0	0	0	0	31	40				EB, PD, JM	N
Colt Creek	C3	4240	R	1	8	2.5	0.12		0.35	0.3	7.9	3.5	28		15	20	45	20	0	M	0.35	R	L	6		0.19				0	0	0	0	0.0	5	0	0	0	5	0					N
Colt Creek	C3	4248	G	1	5	1.0	0.29		0.4	0.4	6.5	4.8	24		18	45	35	2	0	M	0.25	R	L	11	0.50	0.19	0.31	R		2	1	0	0	0.6	2	0	0	0	3	2				EB, PD	N
Colt Creek	C3	4253	R	1	24	2.5	0.12		0.4	0.4	5.6	2.7	65		5	35	55	5	0	M	0.20	R	L	25		0.1				1	0	0	0	0.0	0	0	0	0	0	2				MC, EB, PD	N
Colt Creek	C3	4277	P	1	7	0.0	0.26		0.35	0.35	7.0	3.5	25		33	40	25	2	0	M/H	0.15	R	L	10	0.60	0.1	0.50	R		4	1	3	0	9.8	0	0	0	0	10	0				MC, EB	N
Colt Creek	C3	4284	R	1	16	2.0	0.10		0.4	0.4	10.9	9.3	149		20	30	40	10	0	H	0.30	R	L	48		0.16				0	0	0	0	0.0	2	0	0	0	2	2				MB,MC,EB	N
Colt Creek	C3	4300	P	1	9	0.0	0.60		0.35	0.4	7.1	4.6	41		40	15	43	2	0	H	0.15	R	L	7	1.30	0.16	1.14	R	Y	12	5	4	0	26.0	0	0	0	0	26	30				EB, PD, JM	N
Colt Creek	C3	4309	G	1	13	1.0	0.34		0.35	0.35	7.2	2.4	31		10	30	55	5	0	M	0.20	R	M	10	0.50	0.16	0.34	R		0	0	0	0	0.0	0	0	0	0	0	35				EB	N
Colt Creek	C3	4322	R	1	42	2.5	0.11		0.15	0.2	9.3	4.9	206		10	20	50	20	0	M	0.40	R	L	47		0.12				0	0	0	0	0.0	10	0	0	0	10	25					N
Colt Creek	C3	4364	P	1	17	0.0	0.48		0.4	0.45	5.9	4.9	83		35	20	43	2	0	H	0.20	R	L	19	0.80	0.12	0.68	R	Y	0	0	0	0	0.0	0	10	0	0	10	60				EB	N
Colt Creek	C3	4381	G	1	7	1.0	0.30		0.35	0.3	7.2	3.3	23		15	15	50	20	0	H	0.30	R	L	4	0.45	0.12	0.33	R		0	0	0	0	0.0	0	10	0	0	10	50				EB	N
Colt Creek	C3	4388	R	1	10	4.5	0.08		0.1	0.2	13.8	8.6	86		10	40	40	10	0	M	0.35	R	M	36		0.11				0	0	0	0	0.0	0	0	0	0	0	5					N
Colt Creek	C3	4398	P	1	24	0.0	0.55		0.25	0.35	6.4	5.0	120		25	50	20	5	0	M	0.15	R	L	61	0.90	0.11	0.79	R	Y	2	0	2	0	3.5	0	0	0	0	4	45					N
Colt Creek	C3	4422	R	1	25	2.0	0.13		0.15	0.15	9.0	4.4	110		10	20	40	30	0	M	0.35	R	M	25		0.13				1	0	0	0	0.0	0	0	0	0	0	30				PD	N
Colt Creek	C3	4447	P	1	10	0.0	0.70		0.25	0.35	6.5	6.0	60		30	55	25	0	0	L	0.08	R	M	34	1.00	0.13	0.87	R	Y	12	5	5	0	16.7	0	0	2	0	19	60				EB, JM, PD	N
Colt Creek	C3	4457	R	1	29	4.0	0.12		0.35	0.35	10.0	5.6	162		5	25	60	10	0	M	0.35	R	L	46		0.2				0	0	0	0	0.0	5	0	0	0	5	5					N
Colt Creek	C3	4486	G	1	20	1.0	0.30		0.45	0.35	6.3	4.0	80		10	40	20	30	0	M	0.40	R	M	33	0.35	0.2	0.15	R		3	0	0	0	0.0	5	0	4	0	9	5				PD	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally										Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	4506	R	1	9	4.0	0.09	0.4	0.3	9.4	6.3	57	5	45	40	10	0	M	0.30	R	L	27		0.1				0	0	0	0	0.0	0	0	0	0	0	0				MB	N
Colt Creek	C3	4515	P	1	5	0.0	0.26	0.3	0.3	8.6	7.4	37	50	40	10	0	0	M	0.08	R	L	15	0.65	0.1	0.55	R	Y	2	0	2	0	3.8	0	0	0	0	4	60					N
Colt Creek	C3	4520	R	1	16	2.0	0.09	0.3	0.2	7.4	6.2	98	18	35	45	2	0	M	0.20	R	L	37		0.11				0	0	0	0	0.0	2	0	0	0	2	30					N
Colt Creek	C3	4536	P	1	13	0.0	0.37	0.4	0.2	6.8	4.8	62	50	30	20	0	0	M	0.15	R	L	19	0.50	0.11	0.39	R		0	0	0	0	0.0	0	0	0	0	0	15				MB	N
Colt Creek	C3	4549	R	1	23	2.0	0.10	0.25	0.3	7.8	4.1	94	10	50	35	5	0	L	0.20	R	M	49		0.13				0	0	0	0	0.0	0	2	0	0	2	40				MB	N
Colt Creek	C3	4572	P	1	18	0.0	0.60	0.4	0.35	6.0	3.0	54	30	20	45	5	0	M	0.25	R	L	12	0.75	0.13	0.62	R	Y	13	5	4	3	24.4	0	0	0	0	24	55				PD, JM	N
Colt Creek	C3	4590	G	1	15	1.0	0.15	0.45	0.35	4.7	2.7	41	30	45	23	2	0	M	0.15	R	L	19	0.52	0.13	0.39	R		0	0	0	0	0.0	0	0	0	0	0	30				EB	N
Colt Creek	C3	4605	R	1	6	2.0	0.09	0.35	0.3	7.3	4.4	26	5	32	60	2	0	M	0.20	R	L	9		0.15				3	0	0	0	0.0	2	0	0	0	2	0				MB, EB, PD	N
Colt Creek	C3	4611	G	1	19	1.0	0.48	0.15	0.3	12.6	3.8	72	50	20	30	0	0	H	0.15	R	L	16	0.60	0.15	0.45	R		2	1	1	0	4.8	0	0	0	0	5	30				EB	N
Colt Creek	C3	4630	R	1	20	5.0	0.05	0.1	0.2	15.0	8.4	168	5	65	30	0	0	M	0.10	R	M	112		0.08				0	0	0	0	0.0	0	0	0	0	0	0				MB	N
Colt Creek	C3	4650	P	1	53	0.0	0.44	0.25	0.25	11.7	2.5	133	10	70	20	0	0	M	0.15	R	M	94	0.80	0.08	0.72	R		6	0	4	0	2.1	0	5	0	0	7	25				EB, PD	N
Colt Creek	C3	4703	R	1	9	4.0	0.05	0.15	0.1	17.0	4.0	36	8	45	45	2	0	L	0.15	R	M	17		0.06				0	0	0	0	0.0	0	0	0	0	0	0				EB	N
Colt Creek	C3	4712	G	1	18	1.0	0.19	0.35	0.3	10.9	3.5	62	25	40	30	5	0	M	0.20	R	M	26	0.30	0.06	0.24	R		1	1	0	0	0.2	0	0	0	0	0	5				EB	N
Colt Creek	C3	4730	R	1	13	3.0	0.07	0.3	0.25	11.5	4.2	55	15	30	45	10	0	H	0.30	R	M	18		0.12				1	0	0	0	0.0	2	0	0	0	2	5				MB,EB	N
Colt Creek	C3	4743	P	1	14	0.0	0.36	0.25	0.2	9.2	4.2	59	30	25	43	2	0	L	0.25	R	L	16	0.65	0.12	0.53	R	Y	11	6	5	0	13.5	0	2	0	0	16	40				JM	N
Colt Creek	C3	4757	R	1	57	2.0	0.07	0.35	0.25	10.6	3.0	171	10	25	55	10	0	M	0.30	R	L	48		0.1				1	0	0	0	0.0	0	0	0	0	0	5				EB,PD	N
Colt Creek	C3	4814	P	1	12	0.0	0.61	0.25	0.25	5.2	5.2	62	50	10	20	20	0	M	0.30	R	L	7	0.90	0.1	0.80	R	Y	12	5	5	0	12.0	5	0	0	0	17	50				PD, JM	N
Colt Creek	C3	4826	R	1	9	5.0	0.15	0.4	0.35	7.9	2.9	26	5	25	45	25	0	M	0.45	R	L	7		0.13				2	0	0	0	0.0	0	0	0	0	0	0				EB,PD	N
Colt Creek	C3	4835	P	1	15	0.0	0.40	0.25	0.3	8.6	5.3	79	25	45	30	0	0	H	0.20	R	L	37	0.75	0.13	0.62	R		12	4	5	1	11.8	0	0	0	0	12	20				PD, JM	N
Colt Creek	C3	4850	G	1	35	1.0	0.21	0.3	0.35	8.0	5.0	175	18	60	20	2	0	M	0.15	R	M	107	0.35	0.13	0.22	R		0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Colt Creek	C3	4885	P	1	15	0.0	0.39	0.35	0.35	6.4	3.6	54	15	30	45	10	0	L	0.30	R	M	18	0.65	0.35	0.30	R		3	1	0	0	0.8	0	10	0	0	11	30				EB,PD	N
Colt Creek	C3	4900	R	1	22	2.0	0.12	0.25	0.3	9.9	3.8	84	5	25	60	10	0	L	0.30	R	L	24		0.2				1	0	0	0	0.0	0	0	0	0	0	20				PD	N
Colt Creek	C3	4922	G	1	6	1.0	0.17	0.2	0.25	7.8	4.6	28	10	35	50	5	0	M	0.15	R	M	10	0.35	0.2	0.15	R		0	0	0	0	0.0	5	0	0	0	5	2					N
Colt Creek	C3	4928	P	1	10	0.0	0.40	0.4	0.25	7.8	5.6	56	15	35	45	5	0	M	0.20	R	M	21	0.70	0.2	0.50	R	Y	13	5	5	1	17.4	0	0	0	0	17	50				EB, PD, JM	N
Colt Creek	C3	4938	R	1	5	2.0	0.13	0.4	0.35	5.6	4.1	21	10	20	60	10	0	M	0.27	R	L	5		0.2				0	0	0	0	0.0	0	0	0	0	0	5				EB	N
Colt Creek	C3	4943	P	1	7	0.0	0.42	0.35	0.45	7.0	5.0	35	30	20	40	10	0	M	0.30	R	L	8	0.50	0.2	0.30	R		2	1	1	0	12.6	2	0	0	0	15	40				EB	N
Colt Creek	C3	4950	R	1	150	2.0	0.10	0.5	0.3	9.9	6.5	975	5	35	50	10	0	M	0.30	R	M	371		0.17				0	0	0	0	0.0	5	0	0	0	5	0				MB, EB	N
Colt Creek	C3	5100	G	1	32	1.0	0.32	0.4	0.3	8.7	4.7	150	15	30	45	10	0	M	0.35	R	M	49	0.50	0.17	0.33	R		1	1	0	0	0.4	5	0	0	0	5	5				EB	N
Colt Creek	C3	5132	R	1	36	2.5	0.12	0.2	0.35	8.8	7.6	274	5	40	40	15	0	M	0.35	R	M	116		0.17				0	0	0	0	0.0	10	0	0	0	10	10				MB	N
Colt Creek	C3	5168	G	1	24	1.0	0.20	0.3	0.25	8.7	3.4	82	10	45	35	10	0	L	0.40	R	M	38	0.40	0.08	0.32	R		0	0	0	0	0.0	0	0	0	0	0	30					N
Colt Creek	C3	5192	R	1	8	3.5	0.10	0.35	0.2	9.0	7.3	58	5	35	55	5	0	L	0.20	R	L	22		0.11				0	0	0	0	0.0	2	0	0	0	2	30					N
Colt Creek	C3	5200	P	1	19	0.0	0.56	0.35	0.3	7.2	4.6	86	30	20	45	5	0	L	0.25	R	L	20	1.10	0.11	0.99	R	Y	2	2	0	0	0.7	2	2	0	0	5	40					N
Colt Creek	C3	5219	R	1	21	3.0	0.15	0.3	0.15	10.2	5.1	106	5	25	55	15	0	M	0.30	R	L	30		0.19				0	0	0	0	0.0	10	0	0	0	10	35					N
Colt Creek	C3	5240	G	1	19	1.5	0.18	0.25	0.2	9.8	5.6	106	10	20	65	5	0	M	0.25	R	L	25	0.35	0.19	0.16	R		2	1	1	0	1.2	2	0	0	0	3	15					N
Colt Creek	C3	5259	P	1	10	0.0	0.49	0.2	0.25	8.4	5.4	54	30	20	40	10	0	M	0.35	R	L	12	0.60	0.19	0.41	R		3	1	0	0	0.3	2	0	0	0	2	45					N
Colt Creek	C3	5269	R	1	37	2.0	0.10	0.15	0.3	9.1	8.4	311	10	35	45	10	0	M	0.40	R	L	117		0.24				0	0	0	0	0.0	5	0	0	0	5	10					N
Colt Creek	C3	5306	G	1	41	1.0	0.26	0.25	0.3	8.2	4.6	187	15	30	45	10	0	M	0.40	R	M	61	0.48	0.24	0.24	R		4	4	0	0	0.3	5	2	0	0	7	45					N
Colt Creek	C3	5347	R	1	17	3.0	0.15	0.2	0.2	12.9	7.8	133	5	30	45	20	0	M	0.50	R	L	43		0.14				1	0	0	0	0.0	10	0	0	0	10	5					N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally											Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C3	5364	P	1	17	0.0	0.28	0.25	0.25	8.9	5.0	85	30	40	25	5	0	L	0.25	R	L	35	0.43	0.14	0.29	R		0	0	0	0	0.0	0	0	0	0	0	35					N
Colt Creek	C3	5381	R	1	7	2.0	0.11	0.25	0.3	9.7	8.1	57	5	45	45	5	0	L	0.25	R	M	27		0.08				0	0	0	0	0.0	2	2	0	0	4	25				MB	N
Colt Creek	C3	5388	P	1	10	0.0	0.42	0.3	0.25	6.7	5.6	56	13	45	40	2	0	M	0.20	R	H	27	0.65	0.08	0.57	R		2	1	1	0	3.3	2	0	0	0	5	5				EB	N
Colt Creek	C3	5398	R	1	22	2.5	0.08	0.2	0.2	19.0	10.2	223	5	45	35	15	0	M	0.50	R	M	105		0.16				0	0	0	0	0.0	0	0	0	0	0	5				MB	N
Colt Creek	C3	5420	O	1	16	1.0	0.16	0.3	0.3	10.0	5.0	80	15	35	35	15	0	M	0.35	R	L	30		0.2		W/R		20	6	6	1	17.8	2	2	0	0	22	45				EB,PD,MB,MC,JM	N
Colt Creek	C3	5436	P	1	16	0.0	0.31	0.45	0.45	5.4	4.0	64	10	30	50	10	0	L	0.25	R	M	21	0.50	0.18	0.32	R		2	1	0	0	0.2	5	0	0	0	5	5				EB, PD	N
Colt Creek	C3	5452	R	1	15	3.5	0.11	0.2	0.25	10.4	5.2	77	5	45	40	10	0	M	0.40	R	M	37		0.15				0	0	0	0	0.0	0	0	0	0	0	2					N
Colt Creek	C3	5467	G	1	41	1.5	0.12	0.25	0.15	6.7	6.5	264	10	35	50	5	0	M	0.25	R	H	100	0.40	0.15	0.25	R		1	1	0	0	0.2	2	2	0	0	4	50					N
Colt Creek	C3	5508	R	1	13	2.0	0.14	0.25	0.3	11.6	5.1	66	5	10	45	40	0	M	0.30	R	L	8		0.17				0	0	0	0	0.0	25	0	0	0	25	60					N
Colt Creek	C3	5521	G	1	14	1.0	0.24	0.3	0.35	10.0	4.7	66	15	30	45	10	0	M	0.30	R	L	22	0.37	0.17	0.20	R		2	1	0	0	0.7	5	0	0	0	6	20					N
Colt Creek	C3	5535	R	1	33	2.0	0.10	0.3	0.2	8.4	7.9	261	10	40	45	5	0	M	0.20	R	M	111		0.15				0	0	0	0	0.0	2	2	0	0	4	30					N
Colt Creek	C3	5568	G	1	21	1.0	0.24	0.1	0.2	7.2	4.2	88	10	25	60	5	0	M	0.25	R	L	25	0.55	0.15	0.40	R		2	1	0	0	0.7	2	2	0	0	5	10				EB	N
Colt Creek	C3	5589	R	1	20	3.5	0.07	0.2	0.25	10.0	8.2	164	10	20	50	10	0	M	0.40	R	L	38		0.13				0	0	0	0	0.0	0	0	0	0	0	10				MB	N
Colt Creek	C3	5609	P	1	9	0.0	0.60	0.3	0.3	10.0	7.0	63	50	30	15	5	0	M	0.20	R	L	19	0.75	0.13	0.62	R	Y	15	8	5	1	17.6	2	2	0	0	22	60				JM	N
Colt Creek	C3	5618	R	1	14	2	0.18	0.1	0.15	8.1	7.3	102	10	20	40	30	0	M	0.40	R	L	23		0.19				0	0	0	0	0.0	15	0	0	0	15	40					N
Colt Creek	C3	5632	G	1	11	1.0	0.24	0.15	0.2	7.6	5.4	59	10	30	45	15	0	M	0.40	R	L	19	0.30	0.19	0.11	R		0	0	0	0	0.0	5	0	0	0	5	15					N
Colt Creek	C3	5643	R	1	12	2.5	0.13	0.3	0.3	9.5	4.7	56	5	20	40	35	0	M	0.50	R	L	13		0.16				0	0	0	0	0.0	0	0	0	0	0	5					N
Colt Creek	C3	5655	P	1	25	0.0	0.58	0.3	0.2	10.8	6.0	150	35	20	40	5	0	M	0.25	R	L	34	0.90	0.16	0.74	R	Y	11	6	5	0	7.1	2	2	0	0	11	30				EB, JM	N
Colt Creek	C3	5680	G	1	11	1.0	0.32	0.3	0.3	5.3	4.7	52	20	25	50	5	0	M	0.26	R	L	14	0.45	0.16	0.29	R		6	1	0	0	0.9	2	0	0	0	3	25				PD	N
Colt Creek	C3	5691	P	1	7	0.0	0.69	0.3	0.35	7.5	4.0	28	15	20	45	20	0	M	0.40	R	L	6	0.90	0.4	0.50	R	Y	11	4	4	0	23.6	10	0	0	0	34	80				JM, PD	N
Colt Creek	C3	5698	R	1	49	3	0.20	0.2	0.25	8.7	3.6	174	5	30	55	10	0	M	0.35	R	M	58		0.09				0	0	0	0	0.0	0	0	0	0	0	25				EB	N
Colt Creek	C3	5747	G	1	8	1.0	0.17	0.35	0.35	9.8	5.6	45	15	35	45	5	0	M	0.20	R	L	17	0.40	0.09	0.31	R		1	0	0	1	5.0	0	0	0	0	5	10				EB	N
Colt Creek	C3	5755	R	1	78	3	0.20	0.25	0.25	8.8	6.4	499	5	40	45	10	0	M	0.35	R	L	213		0.19				2	0	0	0	0.0	5	0	0	0	5	15				MB, EB, PD	N
Colt Creek	C3	5833	G	1	16	1.0	0.25	0.3	0.3	8.9	5.5	88	18	25	55	2	0	L	0.25	R	L	25	0.60	0.25	0.35	R		6	3	2	0	2.3	2	2	0	0	6	5				PD	N
Colt Creek	C3	5849	R	1	14	2	0.10	0.25	0.35	9.0	7.2	101	10	30	55	5	0	M	0.25	R	L	34		0.15				0	0	0	0	0.0	2	0	0	0	2	20					N
Colt Creek	C3	5863	G	1	15	1	0.26	0.3	0.25	8.9	3.6	53	30	20	40	10	0	M	0.30	R	L	12	0.35	0.15	0.20	R		0	0	0	0	0.0	2	0	0	0	2	25					N
Colt Creek	C3	5878	R	1	3	2	0.07	0.3	0.2	9.0	6.3	19	8	35	55	2	0	H	0.12	R	L	7		0.12				0	0	0	0	0.0	0	0	0	0	0	15					N
Colt Creek	C3	5881	P	1	9	0	0.39	0.33	0.4	12.0	5.8	52	60	10	25	5	0	M	0.20	R	L	6	0.80	0.12	0.68	R	Y	6	0	2	0	8.0	2	2	0	0	12	30				EB, PD	N
Colt Creek	C3	5890	R	1	13	2	0.12	0.35	0.2	11.4	9.6	124	15	50	25	10	0	L	0.30	R	M	64		0.15				0	0	0	0	0.0	0	0	0	0	0	10				EB	N
Colt Creek	C3	5903	G	1	25	1	0.40	0.25	0.35	10.7	3.4	85	25	50	20	5	0	M	0.20	R	L	44	0.47	0.15	0.32	R		11	6	5	0	12.5	2	5	0	0	19	40				EB, JM	N
Colt Creek	C3	5928	R	1	14	2	0.13	0.35	0.45	4.7	3.0	42	10	20	65	5	0	M	0.25	R	L	10		0.17				0	0	0	0	0.0	0	5	0	0	5	2				MB,EB	N
Colt Creek	C3	5942	G	1	20	2	0.25	0.15	0.2	8.4	4.0	79	5	30	60	5	0	M	0.25	R	L	27	0.65	0.17	0.48	R	Y	0	0	0	0	0.0	0	0	0	0	0	50				MB	N
Colt Creek	C3	5962	P	1	8	0	0.38	0.1	0.25	9.8	5.0	40	33	20	45	2	0	M	0.20	R	L	9	0.80	0.24	0.56	R	Y	11	5	6	0	21.4	2	2	0	0	25	50				MB, EB, JM	N
Colt Creek	C3	5970	R	1	16	2	0.12	0.55	0.3	14.3	5.8	93	5	25	50	10	0	M	0.30	R	M	26		0.15				0	0	0	0	0.0	2	0	0	0	2	2				EB	N
Colt Creek	C3	5986	G	1	39	1	0.32	0.4	0.3	7.2	3.5	135	5	30	60	5	0	M	0.12	R	M	45	0.60	0.16	0.44	R		0	0	0	0	0.0	2	0	0	0	2	2				EB	N
Colt Creek	C3	6025	R	1	26	2	0.15	0.35	0.2	8.0	4.3	112	8	30	60	2	0	H	0.20	R	L	38		0.13				0	0	0	0	0.0	2	0	0	0	2	5				EB	N
Colt Creek	C3	6051	G	1	15	1	0.17	0.15	0.1	6.2	4.5	68	20	43	35	2	0	M	0.20	R	L	30	0.40	0.13	0.27	R		2	1	0	0	0.2	2	2	0	0	4	15				EB	N
Colt Creek	C3	6066	R	1	12	2	0.15	0.1	0.15	6.8	5.0	60	5	20	65	10	0	M	0.30	R	M	14						3	0	0	0	0.0	5	0	0	0	5	15				PD	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C4	0	G	1	12	1	0.30	0.15	0.15	8.3	3.9	47	5	35	50	10	0	M	0.30	R	M	18	0.45	0.15	0.25	R		0	0	0	0	0.0	10	0	0	0	10	15					N
Colt Creek	C4	12	R	1	22	3.5	0.15	0.25	0.4	5.0	4.3	95	5	20	45	30	0	M	0.50	R	L	21						4	0	0	0	0.0	30	0	0	0	30	30				PD	N
Colt Creek	C4	34	G	1	8	1	0.25	0.4	0.45	4.6	4.4	35	35	35	20	10	0	H	0.35	R	L	13	0.55	0.15	0.40			1	0	1	0	1.0	10	0	0	0	11	15				EB	N
Colt Creek	C4	42	R	1	18	4	0.15	0.35	0.4	5.1	5.1	92	10	15	40	35	0	M	0.50	R	L	16						4	0	0	0	0.0	35	0	0	0	35	20				EB, PD	N
Colt Creek	C4	60	G	1	31	0.5	0.35	0.35	0.35	9.8	3.6	112	15	40	35	10	0	M	0.25	R	L	47	0.45	0.15	0.30	W		18	5	10	3	26.4	10	0	0	0	36	0				JM	N
Colt Creek	C4	91	R	1	15	4	0.12	0.3	0.3	9.8	3.6	54	5	50	25	20	0	M	0.35	R	M	28						0	0	0	0	0.0	20	0	0	0	20	0				EB	N
Colt Creek	C4	106	P	1	13	0	0.66	0.25	0.25	9.8	6.4	83	35	45	15	5	0	M	0.20	R	L	38	1.00	0.15	0.85	R		1	0	1	0	0.4	5	0	2	0	7	0					N
Colt Creek	C4	119	G	1	6	1	0.20	0.45	0.35	10.3	2.6	15	15	40	35	10	0	M	0.25	R	L	6	0.45	0.09	0.36	R	Y	1	0	1	0	34.3	10	0	0	0	44	30				EB	N
Colt Creek	C4	125	R	1	11	3.5	0.09	0.4	0.3	12.0	4.8	53	5	30	55	10	0	M	0.25	R	L	18						0	0	0	0	0.0	10	0	0	0	10	30				EB	N
Colt Creek	C4	136	G	1	23	0	0.14	0.35	0.35	8.6	5.5	125	25	50	20	5	0	M	0.15	R	M	64	0.65	0.08	0.57	R	Y	15	9	6	0	13.8	5	2	0	0	21	30				JM	N
Colt Creek	C4	159	R	1	10	5	0.08	0.4	0.5	13.0	10.0	100	10	30	45	15	0	M	0.50	R	M	33						1	0	0	0	0.0	15	0	0	0	15	0				MB, PD	N
Colt Creek	C4	169	G	1	17		0.14	0.4	0.2	10.5	8.6	146	15	55	30	5	0	M	0.20	R	M	83	0.65	0.15	0.50	W	Y	19	8	10	1	25.7	5	5	0	0	36	20				JM	N
Colt Creek	C4	186	P	1	28	0	0.14	0.45	0.45	4.4	3.6	101	45	30	15	10	0	L	0.30	R	L	31	0.65	0.19	0.46	R	Y	4	0	4	0	5.6	10	0	0	0	16	40				EB	N
Colt Creek	C4	214	R	1	62	3	0.14	0.45	0.4	6.7	4.2	260	15	20	35	30	0	M	0.45	R	M	58			0.00			1	0	0	0	0.0	30	0	0	0	30	2				EB, PD	N
Colt Creek	C4	276	G	1	28	1	0.14	0.25	0.2	9.0	8.0	224	15	50	30	5	0	L	0.25	R	L	116	0.25	0.16	0.09	R		0	0	0	0	0.0	5	0	0	0	5	10					N
Colt Creek	C4	304	R	1	24	2	0.16	0.4	0.35	7.9	7.1	169	15	50	25	10	0	M	0.30	R	L	87						3	0	3	0	4.3	10	0	0	0	14	40				MB	N
Colt Creek	C4	328	G	1	21	1	0.14	0.35	0.45	8.2	6.1	127	15	40	35	10	0	L	0.27	R	M	53	0.50	0.2	0.30	R		0	0	0	0	0.0	10	0	0	0	10	40					N
Colt Creek	C4	349	R	1	4	2.5	0.17	0.35	0.4	8.8	5.9	24	5	50	35	10	0	M	0.30	R	L	12						0	0	0	0	0.0	10	0	0	0	10	40					N
Colt Creek	C4	353	P	1	17	1	0.35	0.15	0.45	8.9	5.5	94	10	35	40	15	0	L	0.35	R	L	35	0.70	0.15	0.55	R	Y	0	0	0	0	0.0	15	0	0	0	15	40					N
Colt Creek	C4	370	R	1	16	2.5	0.00	0.45	0.3	8.0	3.0	48	5	20	70	5	0	M	0.30	R	L	12						0	0	0	0	0.0	5	0	0	0	5	5				MB	N
Colt Creek	C4	386	G	1	22	1	0.25	0.35	0.35	7.2	5.5	120	15	35	45	5	0	M	0.26	R	L	45	0.60	0.12	0.48	R	Y	11	6	5	0	11.8	5	2	0	0	19	40				MC, EB, JM	N
Colt Creek	C4	408	R	1	29	3	0.12	0.3	0.25	10.4	8.3	239	5	25	45	25	0	L	0.30	R	M	66						0	0	0	0	0.0	25	0	0	0	25	40					N
Colt Creek	C4	437	G	1	38	1	0.59	0.35	0.35	8.4	3.2	120	10	35	45	10	0	M	0.40	R	L	45	0.55	0.17	0.38	R		0	0	0	0	0.0	10	0	0	0	10	0					N
Colt Creek	C4	475	R	1	38	2	0.16	0.25	0.3	13.3	2.4	91	5	20	65	10	0	M	0.30	R	L	22						0	0	0	0	0.0	10	0	0	0	10	0				MB, EB	N
Colt Creek	C4	513	P	1	12	0	0.43	0.25	0.35	12.2	4.9	58	10	10	40	40	0	M	0.40	R	L	7	0.90	0.18	0.72	R	Y	2	0	1	0	2.4	40	0	0	0	42	10				MB, EB, PD	N
Colt Creek	C4	525	R	1	4	3	0.08	0.3	0.35	11.1	9.0	36	5	30	50	10	0	M	0.30	R	L	12						0	0	0	0	0.0	10	0	0	0	10	0				MB, EB	N
Colt Creek	C4	529	G	1	30	1	0.31	0.35	0.4	6.6	5.6	168	20	50	25	5	0	M	0.20	R	M	87	0.60	0.25	0.35	R		5	5	0	0	1.3	5	0	0	0	6	5				EB	N
Colt Creek	C4	559	R	1	27	2	0.13	0.2	0.35	7.9	6.2	167	10	20	35	35	0	M	0.40	R	M	37						3	0	0	0	0.0	35	0	0	0	35	5				MB, EB, PD	N
Colt Creek	C4	586	G	1	12	1	0.23	0.3	0.45	7.6	4.2	50	20	30	40	10	0	M	0.30	R	L	16						5	2	2	0	7.4	10	5	0	0	22	20				MB, EB, PD	N
Colt Creek	C4	598	R	1	32	2	0.15	0.35	0.35	7.6	3.8	120	10	25	45	20	0	L	0.50	R	L	33						3	0	0	0	0.0	20	0	0	0	20	2				MB, EB, PD	N
Colt Creek	C4	630	G	1	10	1.5	0.35	0.4	0.3	8.4	4.0	40	20	30	35	25	0	M	0.50	R	L	13	0.45	0.24	0.21	R		1	0	0	0	0.0	25	0	0	0	25	5				EB, PD	N
Colt Creek	C4	640	R	1	40	3	0.15	0.35	0.3	10.5	3.9	156	10	20	40	30	0	M	0.50	R	L	35						0	0	0	0	0.0	30	0	0	0	30	0					N
Colt Creek	C4	680	G	1	10	1	0.28	0.4	0.25	7.3	5.3	53	20	15	25	40	0	M	0.45	R	L	9	0.65	0.25	0.40	R	Y	5	1	4	0	19.1	40	5	0	0	64	2				EB	N
Colt Creek	C4	690	R	1	23	3	0.19	0.35	0.3	8.7	2.8	64	5	25	50	20	0	M	0.45	R	L	18						1	0	0	0	0.0	20	0	0	0	20	5				EB, PD	N
Colt Creek	C4	713	G	1	7	1	0.30	0.35	0.35	11.0	3.4	23	20	25	45	10	0	M	0.30	R	L	6	0.45	0.3	0.15	R		2	0	0	0	0.0	10	0	0	0	10	2				EB, PD	N
Colt Creek	C4	720	P	1	7	0	0.51	0.3	0.4	5.5	3.8	26	30	25	35	10	0	M	0.25	R	L	7	0.80	0.2	0.60	R		1	0	0	0	0.0	10	10	0	0	20	5				EB, PD	N
Colt Creek	C4	727	G	1	4	1	0.17	0.5	0.45	6.9	4.0	16	20	50	25	5	0	M	0.20	R	L	8	0.45	0.2	0.25	W	Y	11	7	4	0	98.4	5	0	0	0	103	5				EB, JM	N
Colt Creek	C4	731	R	1	26	4	0.08	0.45	0.35	11.2	4.1	107	10	15	35	40	0	M	0.45	R	L	18						0	0	0	0	0.0	40	0	0	0	40	2				EB, MB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)			Percent bed material (range in mm)						Spawning gravel			Pools Only					Functional LWD tally							Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C4	757	P	1	13	0	0.39	0.4	0.3	11.5	8.6	112	35	25	35	5	0	M	0.25	R	L	30	0.55	0.19	0.36	W	Y	13	5	7	1	28.9	5	0	0	0	34	35	SC	G	10	EB, JM	N
Colt Creek	C4	770	R	1	27	2	0.18	0.35	0.3	10.7	4.6	123	5	20	35	40	0	M	0.40	R	L	27						0	0	0	0	0.0	40	0	0	0	40	5				EB	N
Colt Creek	C4	797	G	1	15	1	0.34	0.45	0.4	15.0	3.6	54	25	20	50	5	0	M	0.25	R	L	12	0.55	0.27	0.28	R		3	1	1	0	2.7	5	2	0	0	10	5				EB, PD	N
Colt Creek	C4	812	R	1	16	5	0.12	0.3	0.25	11.7	8.6	138	5	30	55	10	0	M	0.30	R	L	46						0	0	0	0	0.0	10	0	0	0	10	2				EB	N
Colt Creek	C4	828	G	1	25	1	0.30	0.3	0.35	11.3	4.6	115	10	40	45	5	0	L	0.25	R	L	49	0.55	0.18	0.37	R		2	0	2	0	4.9	5	5	0	0	15	25				EB	N
Colt Creek	C4	853	R	1	31	2	0.15	0.3	0.35	10.4	8.2	254	10	15	40	35	0	M	0.45	R	L	44						0	0	0	0	0.0	35	0	0	0	35	5				EB, MB	N
Colt Creek	C4	884	G	1	19	1	0.29	0.35	0.4	7.0	4.6	87	5	30	55	10	0	M	0.30	R	M	29	0.57	0.18	0.39	R		0	0	0	0	0.0	10	2	0	0	12	15				EB	N
Colt Creek	C4	903	R	1	6	2	0.18	0.4	0.3	7.2	5.5	33	10	15	60	15	0	M	0.35	R	L	6						1	0	0	0	0.0	15	0	0	0	15	2				EB, PD	N
Colt Creek	C4	909	G	1	7	1	0.21	0.4	0.45	6.6	4.9	34	10	20	40	35	0	M	0.35	R	M	8	0.35	0.2	0.15	R		0	0	0	0	0.0	35	0	0	0	35	2				EB	N
Colt Creek	C4	916	R	1	77	2	0.14	0.7	0.7	8.5	3.5	270	30	30	30	10	0	M	0.25	R	L	86	0.47	0.19	0.28	R		0	0	0	0	0.0	10	0	0	0	10	0					N
Colt Creek	C4	993	G	1	16	1	0.31	0.45	0.35	6.7	5.4	86	15	20	30	5	30	M	0.25	R	L	19	0.55	0.23	0.32	R	Y	0	0	0	0	0.0	5	0	0	0	5	50					N
Colt Creek	C4	1009	R	1	17	3	0.13	0.3	0.35	8.1	6.4	109	5	30	45	10	10	M	0.35	R	L	36						0	0	0	0	0.0	10	0	0	0	10	15					N
Colt Creek	C4	1026	G	1	16	1	0.51	0.3	0.35	8.9	6.5	103	5	10	20	20	50	M	0.30	R	L	12	0.85	0.23	0.62	R		0	0	0	0	0.0	20	0	0	0	20	5					N
Colt Creek	C4	1042	R	1	46	2.5	0.20	0.25	0.3	7.2	6.0	276	8	20	42	30	0	M	0.65	R	L	62						0	0	0	0	0.0	30	0	0	0	30	5				EB	N
Colt Creek	C4	1088	P	1	10	0	0.53	0.3	0.35	9.4	4.9	49	15	25	55	5	0	M	0.25	R	L	40	1.00	0.38	0.62	R		1	0	0	0	0.0	5	0	2	0	7	0				EB, PD	N
Colt Creek	C4	1098	R	1	29	4	0.14	0.3	0.35	12.3	5.8	168	5	10	60	25	0	M	0.45	R	L	23						4	0	0	0	0.0	25	0	0	0	25	0				EB, MB, PD	N
Colt Creek	C4	1127	G	1	6	1	0.35	0.3	0.3	9.3	2.8	17	10	5	60	25	0	M	0.45	R	L	1	0.60	0.17	0.43	R	Y	9	7	1	1	63.7	25	0	0	0	89	0				EB	N
Colt Creek	C4	1133	R	1	33	3.5	0.11	0.15	0.2	10.2	8.5	281	5	15	65	15	0	M	0.40	R	L	53						2	0	0	0	0.0	15	0	0	0	15	5				EB, MB, PD	N
Colt Creek	C4	1166	G	1	22	1	0.19	0.25	0.3	7.5	3.4	75	5	55	35	5	0	M	0.25	R	M	43	0.47	0.22	0.25	R		4	0	4	0	16.8	5	0	0	0	22	30				EB	N
Colt Creek	C4	1188	R	1	80	2	0.12	0.15	0.2	9.5	5.1	404	5	15	55	25	0	M	0.40	R	L	74						0	0	0	0	0.0	25	0	0	0	25	10				EB, MB	N
Colt Creek	C4	1268	G	1	16	1	0.22	0.35	0.3	14.7	5.1	81	5	40	45	10	0	M	0.40	R	M	35	0.45	0.28	0.17	R		1	0	0	0	0.0	10	0	0	0	10	5				EB, MB, PD	N
Colt Creek	C4	1284	P	1	5	0	0.24	0.35	0.3	14.7	4.0	20	20	10	40	30	0	M	0.40	R	L	2	0.40	0.15	0.25	W	Y	7	3	4	0	64.5	30	0	0	0	95	0				EB, MB	N
Colt Creek	C4	1289	R	1	13	2	0.15	0.2	0.25	16.0	3.8	49	5	30	45	20	0	M	0.35	R	L	16						0	0	0	0	0.0	20	0	0	0	20	2				EB, MB	N
Colt Creek	C4	1302	P	1	9	0	0.38	0.6	1.6	6.0	2.6	23	20	20	40	20	0	M	0.40	R	L	5	0.65	0.15	0.50	R		0	0	0	0	0.0	20	0	0	0	20	2				EB, MC	N
Colt Creek	C4	1311	G	1	4	1	0.33	0.2	0.25	16.0	2.1	8	5	30	45	20	0	M	0.40	R	L	3	0.40	0.2	0.20	R		0	0	0	0	0.0	20	0	0	0	20	0					N
Colt Creek	C4	1315	R	1	24	3	0.10	0.35	0.35	12.8	10.5	252	5	55	40	30	0	M	0.40	R	L	145						0	0	0	0	0.0	30	0	0	0	30	0				MB, MC, EB	N
Colt Creek	C4	1339	G	1	21	1	0.14	0.3	0.25	8.0	5.5	116	15	30	45	10	0	M	0.35	R	L	38	0.30	0.17	0.13	R		0	0	0	0	0.0	10	0	0	0	10	2				EB	N
Colt Creek	C4	1360	R	1	24	2	0.13	0.35	0.35	10.2	2.6	62	15	30	45	10	0	M	0.35	R	L	20						0	0	0	0	0.0	10	0	0	0	10	0				MB, MC, EB	N
Colt Creek	C4	1384	G	1	6	1	0.30	0.3	0.4	11.7	5.4	32	5	30	60	15	0	M	0.28	R	L	11	0.55	0.12	0.43	W	Y	11	6	4	1	65.1	15	0	0	0	80	5				MB, MC, EB, JM	N
Colt Creek	C4	1390	R	1	43	3	0.12	0.4	0.35	16.0	5.5	234	5	25	55	15	0	L	0.45	R	M	66						0	0	0	0	0.0	15	0	0	0	15	2				MB, MC, EB	N
Colt Creek	C4	1433	G	1	17	1	0.27	0.35	0.4	6.0	3.0	51	15	25	40	20	0	M	0.35	R	L	14	0.40	0.13	0.27	R		1	1	0	0	2.9	20	0	0	0	23	10				EB	N
Colt Creek	C4	1450	R	1	11	3.5	0.13	0.35	0.4	8.9	4.4	48	5	25	45	25	0	M	0.35	R	L	13						1	0	0	0	0.0	25	0	0	0	25	10				PD	N
Colt Creek	C4	1461	G	1	5	1	0.28	0.4	0.4	6.4	3.7	19	20	25	40	15	0	M	0.35	R	L	5	0.45	0.1	0.35	R		1	0	1	0	11.4	15	0	0	0	26	10				EB	N
Colt Creek	C4	1466	R	1	8	2	0.10	0.35	0.25	11.6	1.4	11	10	30	35	25	0	M	0.35	R	L	3						1	0	0	0	0.0	25	2	0	0	27	0				MB, MC, EB, PD	N
Colt Creek	C4	1474	G	1	11	1	0.17	0.5	0.4	20.0	1.3	14	30	35	30	5	0	M	0.20	R	L	5	0.45	0.14	0.31	R		0	0	0	0	0.0	5	5	0	0	10	0				MB, MC, EB	N
Colt Creek	C4	1485	R	1	10	3	0.14	0.5	0.4	14.3	6.2	62	10	45	35	10	0	L	0.30	R	L	29						0	0	0	0	0.0	10	2	0	0	12	2				MB, EB	N
Colt Creek	C4	1495	G	1	23	1	0.29	0.3	0.4	10.5	5.2	120	20	20	45	15	0	M	0.35	R	L	27	0.36	0.2	0.16	R		0	0	0	0	0.0	15	2	0	0	17	0				EB	N
Colt Creek	C4	1518	R	1	3	2	0.10	0.35	0.3	11.0	5.6	17	10	30	35	25	0	M	0.35	R	L	5						1	0	0	0	0.0	25	0	0	0	25	0				MB, EB, PD	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally										Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C4	1521	P	1	8	0	0.48	0.35	0.4	7.3	5.0	40	25	30	40	5	0	L	0.25	R	M	13	0.50	0.18	0.32	R		0	0	0	0	0.0	5	2			7	2				MB, EB	N
Colt Creek	C4	1529	G	1	8	1	0.34	0.35	0.35	4.6	2.9	23	10	25	50	15	0	M	0.40	R	L	6	0.50	0.22	0.28	R	Y	5	0	5	0	52.8	15	2	0	0	70	30				EB	N
Colt Creek	C4	1537	R	1	10	5	0.15	0.3	0.35	7.8	4.2	42	5	30	55	10	0	M	0.35	R	L	14						3	0	0	0	0.0	10	0	0	0	10	20				MB, EB, PD	N
Colt Creek	C4	1547	G	1	18	1.5	0.18	0.45	0.35	6.4	3.7	67	10	40	35	15	0	M	0.35	R	M	28	0.40	0.16	0.24	R		0	0	0	0	0.0	15	5	0	0	20	5					N
Colt Creek	C4	1565	R	1	63	2	0.16	0.4	0.4	7.0	4.3	271	5	20	50	25	0	M	0.45	R	L	62						2	0	0	0	0.0	25	0	0	0	25	5				EB, PD	N
Colt Creek	C4	1628	G	1	12	1	0.21	1.1	1.1	8.0	2.6	31	20	20	20	30	0	L	0.40	R	L	7			0.00			13	11	2	0	67.8	30	0	0	0	98	0				JM	N
Colt Creek	C4	1640	R	1	53	3.5	0.08	0.4	0.45	9.8	6.8	358	5	30	45	20	0	M	0.40	R	M	117						1	0	0	0	0.0	20	0	0	0	20	5				EB, PD	N
Colt Creek	C4	1693	G	1	14	1	0.44	0.45	0.3	4.2	3.3	46	10	35	40	15	0	M	0.40	R	M	17	0.57	0.16	0.41	R		0	0	0	0	0.0	15	0	0	0	15	25				EB	N
Colt Creek	C4	1707	R	1	20	4.5	0.14	0.4	0.5	10.2	5.0	99	10	25	40	25	0	M	0.40	R	L	27						4	0	0	0	0.0	25	5	0	0	30	0				EB, PD	N
Colt Creek	C4	1727	P	1	22	0	0.28	0.4	0.45	7.4	3.6	79	15	45	35	5	0	M	0.25	R	M	37	0.50	0.16	0.34	R		0	0	0	0	0.0	5	0	0		5	10				EB	N
Colt Creek	C4	1749	R	1	21	3	0.06	0.45	0.4	14.8	5.6	118	5	45	45	5	0	M	0.25	R	L	56						14	10	3	1	20.7	5	2	0	0	28	2				EB, JM	N
Colt Creek	C4	1770	G	1	13	1	0.13	0.5	0.5	9.9	7.3	95	10	30	40	20	0	M	0.45	R	M	31	0.30	0.16	0.14	R		0	0	0	0	0.0	20	0	0	0	20	5				EB	N
Colt Creek	C4	1783	R	1	6	2	0.15	0.5	0.5	9.5	6.4	38	5	23	40	30	0	M	0.40	R	L	10						0	0	0	0	0.0	30	0	0	0	30	5				EB	N
Colt Creek	C4	1789	P	1	11	0	0.57	0.45	0.4	10.3	3.4	37	5	35	50	20	0	M	0.35	R	L	14	0.40	0.2	0.20	R		0	0	0	0	0.0	20	10	0	0	30	40				EB	N
Colt Creek	C4	1800	R	1	6	7	0.10	0.45	0.4	12.2	2.8	17	20	10	50	20	0	M	0.30	R	L	2						0	0	0	0	0.0	20	0	0	0	20	0				EB	N
Colt Creek	C4	1806	P	1	4	0	0.40	0.65	0.45	4.8	3.3	13	20	30	40	10	0	L	0.30	R	L	4	0.90	0.2	0.70	R		2	0	1	0	5.3	10	0	0	0	15	5				EB, PD	N
Colt Creek	C4	1810	R	1	31	3.5	0.20	0.45	0.4	9.5	5.2	161	10	15	50	25	0	M	0.50	R	L	29						1	0	1	0	2.2	25	8	0	0	35	0				MC, EB	N
Colt Creek	C4	1841	G	1	15	1	0.33	0.5	0.45	9.0	4.0	60	15	25	30	30	0	M	0.40	R	L	16	0.50	0.17	0.33	R		2	2	0	0	4.5	30	0	0	0	35	10				EB	N
Colt Creek	C4	1856	R	1	21	5	0.13	0.5	0.45	11.9	6.6	139	5	15	40	40	0	M	0.45	R	L	24						0	0	0	0	0.0	40	0	0	0	40	10				EB	N
Colt Creek	C4	1877	G	1	20	1	0.27	0.35	0.3	8.0	4.8	96	10	20	40	30	0	M	0.40	R	L	22	0.40	0.18	0.22	R		1	1	0	0	0.5	30	0	0	0	30	2				EB	N
Colt Creek	C4	1897	P	1	18	0	0.38	0.35	0.4	8.5	6.8	122	15	25	45	15	0	M	0.40	R	L	34	0.69	0.19	0.50	R		2	0	2	0	1.7	15	5	0	0	22	5				EB	N
Colt Creek	C4	1915	R	1	7	7	0.19	0.4	0.4	7.0	3.5	25	5	15	50	30	0	M	0.40	R	L	4						0	0	0	0	0.0	30	0	0	0	30	0				EB	N
Colt Creek	C4	1922	P	1	8	1	0.30	0.35	0.45	7.0	3.6	29	5	20	60	15	0	M	0.50	R	L	7	0.55	0.1	0.45	R		2	2	0	0	3.1	15	0	0	0	18	15				EB	N
Colt Creek	C4	1930	R	1	7	3	0.10	0.4	0.4	8.9	6.1	43	5	25	55	15	0	M	0.40	R	L	12						0	0	0	0	0.0	15	0	0	0	15	2				EB	N
Colt Creek	C4	1937	P	1	12	0	0.39	0.35	0.4	9.6	7.6	91	10	20	60	10	0	M	0.30	R	L	22	0.60	0.16	0.44	R		4	0	4	0	6.1	10	0	0	0	16	5				EB	N
Colt Creek	C4	1949	R	1	6	2.5	0.16	0.5	0.4	7.6	6.4	38	10	20	50	20	0	M	0.50	R	L	9						0	0	0	0	0.0	20	0	0	0	20	30				EB	N
Colt Creek	C4	1955	G	1	20	1	0.35	0.5	0.4	7.4	4.4	88	10	20	50	20	0	M	0.50	R	L	20	0.45	0.2	0.25	R		0	0	0	0	0.0	20	5	0	0	25	15				EB	N
Colt Creek	C4	1975	R	1	25	1.3	0.30	1	0.6	9.0	3.9	98	20	40	40	0	0		0.25	R	M	41			0.00			0	0	0	0	0.0	0	5	0	0	5	0				EB	N
Colt Creek	C4	2000	G	1	11		0.90	0.8	0.9	10.5	2.5	28	20	40	40	0	0		0.25	R	M	12	0.15		0.15			0	0	0	0	0.0	0	5	0	0	5	0				EB	N
Colt Creek	C4	2011	R	1	19	2.5	0.15	0.4	0.4	8.6	3.4	65	5	20	60	15	0	M	0.45	R	L	15						0	0	0	0	0.0	15	0	0	0	15	5				EB	N
Colt Creek	C4	2030	G	1	9	1	0.22	0.3	0.3	9.0	4.1	36	5	30	55	10	0	M	0.35	R	M	12	0.40	0.15	0.25	R		4	0	3	0	17.3	10	0	0	0	27	0				EB, PD	N
Colt Creek	C4	2039	R	1	10	2.5	0.15	0.35	0.25	8.2	5.3	53	5	10	70	15	0	M	0.40	R	L	8			0.00			0	0	0	0	0.0	15	0	0	0	15	20				EB	N
Colt Creek	C4	2049	G	1	14	1	0.26	0.35	0.25	8.1	3.2	44	10	20	55	15	0	M	0.30	R	L	10	0.45	0.11	0.34	R		0	0	0	0	0.0	15	0	0	0	15	2				EB	N
Colt Creek	C4	2063	R	1	23	4	0.11	0.35	0.35	7.6	4.4	100	5	20	35	30	0	M	0.40	R	L	22						0	0	0	0	0.0	30	0	0	0	30	15				EB	N
Colt Creek	C4	2086	P	1	24	0	0.51	0.45	0.4	14.5	7.4	178	30	20	40	10	0	M	0.25	R	L	40	0.85	0.09	0.76			1	0	0	1	3.4	10	0	0	0	13	2				MB, EB	N
Colt Creek	C4	2110	R	1	34	3	0.09	0.3	0.35	13.5	9.0	306	10	20	50	20	0	M	0.40	R	M	70						0	0	0	0	0.0	20	2	0	0	22	0				MB, EB	N
Colt Creek	C4	2144	G	1	27	1	0.30	0.2	0.15	5.5	4.5	122	10	30	55	5	0	M	0.25	R	M	40	0.50	0.15	0.35	R		0	0	0	0	0.0	5	2	0	0	5	15					N
Colt Creek	C4	2171	R	1	24	3.5	0.15	0.3	0.3	7.3	3.2	76	5	10	45	40	0	M	0.40	R	L	10						0	0	0	0	0.0	40	0	0	0	40	0					N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C4	2195	G	1	95	1	0.46	0.3	0.35	6.9	2.7	252	5	35	50	10	0	M	0.25	R	L	96	0.70	0.08	0.62	R		0	0	0	0	0.0	10	2	0	0	12	15					N
Colt Creek	C4	2290	R	1	36	2	0.08	0.35	0.3	8.0	5.7	205	5	25	45	25	0	M	0.40	R	L	57						0	0	0	0	0.0	25	0	0	25	50	5					N
Colt Creek	C4	2326	P	1	6	0	0.47	0.4	0.4	5.9	3.4	20	10	30	45	15	0	M	0.40	R	L	7	0.85	0.16	0.69	R		1	0	1	0	3.4	15	5	0	15	38	0				EB	N
Colt Creek	C4	2332	R	1	13	2	0.16	0.4	0.4	7.5	3.9	51	5	30	45	30	0	L	0.40	R	L	17						0	0	0	0	0.0	30	0	0	5	35	2				EB	N
Colt Creek	C4	2345	G	1	13	1	0.43	0.3	0.4	9.4	3.7	48	5	25	40	30	0	M	0.35	R	L	13	0.55	0.3	0.25	R		0	0	0	0	0.0	30	10	0	0	40	2				EB	N
Colt Creek	C4	2358	R	1	107	3	0.09	0.3	0.35	11.0	8.5	904	5	15	40	40	0	M	0.50	R	L	157						0	0	0	0	0.0	40	0	0	0	40	2				EB	N
Colt Creek	C4	2465	G	1	7	1	0.20	0.25	0.25	7.9	7.7	54	10	20	50	20	0	M	0.40	R	L	12	0.35	0.26	0.09	R		0	0	0	0	0.0	20	2	0	0	22	15				EB	N
Colt Creek	C4	2472	R	1	17	2	0.13	0.25	0.3	5.9	5.2	88	5	20	45	30	0	M	0.55	R	L	20						0	0	0	0	0.0	30	2	0	0	32	30					N
Colt Creek	C4	2489	G	1	9	1	0.18	0.15	0.3	7.4	4.7	42	5	25	55	15	0	M	0.50	R	L	12	0.35	0.3	0.05	R		0	0	0	0	0.0	15	0	0	0	15	40					N
Colt Creek	C4	2498	R	1	8	3	0.10	0.15	0.25	11.3	10.3	82	5	30	60	5	0	M	0.25	R	M	28						0	0	0	0	0.0	5	0	0	0	5	0					N
Colt Creek	C4	2506	G	1	19	1	0.13	0.25	0.25	8.9	5.7	108	5	25	60	10	0	M	0.30	R	M	31	0.40		0.40	R		2	2	0	0	1.7	10	0	0	0	12	0				MB	N
Colt Creek	C4	2525	P	1	6	0	0.71	0.45	0.35	7.8	5.3	32	10	30	50	10	0	M	0.40	R	L	10	1.10	0.12	0.98	R	Y	7	5	2	0	18.3	10	0	2	0	30	0				EB	N
Colt Creek	C4	2531	R	1	38	2	0.12	0.35	0.25	8.4	3.5	131	5	25	55	15	0	M	0.35	R	L	37						1	0	0	0	0.0	15	0	0	0	15	2				EB, PD	N
Colt Creek	C4	2569	G	1	10	1	0.23	0.35	0.35	9.0	4.6	46	5	55	45	15	0	M	0.30	R	L	27	0.50	0.13	0.37	R		0	0	0	0	0.0	15	0	0	0	15	2				EB	N
Colt Creek	C4	2579	R	1	29	2	0.13	0.35	0.3	8.4	5.8	168	5	20	35	40	0	M	0.50	R	L	37						0	0	0	0	0.0	40	0	0	0	40	5				EB	N
Colt Creek	C4	2608	G	1	10	1	0.31	0.35	0.3	10.2	4.2	42	5	15	30	50	0	M	0.55	R	L	7	0.50	0.24	0.26	R	Y	0	0	0	0	0.0	50	0	0	0	50	10				EB	N
Colt Creek	C4	2618	R	1	5	2	0.25	0.3	0.35	7.2	3.6	18	10	15	35	40	0	M	0.45	R	L	3						1	0	0	0	0.0	40	0	0	0	40	5				PD	N
Colt Creek	C4	2623	G	1	4	1	0.17	0.25	0.25	7.2	3.0	12	5	45	45	5	0	L	0.25	R	L	6	0.35	0.28	0.07	R		3	0	1	0	8.8	5	2	0	0	16	30				PD	N
Colt Creek	C4	2627	P	1	5	0	0.45	0.35	0.35	7.7	5.5	28	20	35	40	5	0	M	0.25	R	L	10	0.65	0.08	0.57	R		5	3	0	0	13.1	5	2	0	0	20	15				EB, PD	N
Colt Creek	C4	2632	R	1	13	4	0.08	0.4	0.35	11.4	2.7	35	5	20	50	25	0	M	0.30	R	L	8						0	0	0	0	0.0	25	0	0	0	25	0				MC, EB	N
Colt Creek	C4	2645	G	1	14	1	0.26	0.4	0.25	13.0	2.7	38	10	15	60	15	0	M	0.30	R	L	7	0.40	0.1	0.30	R		4	1	1	0	5.2	15	0	0	0	20	0				MC, EB, PD	N
Colt Creek	C4	2659	R	1	4	4.5	0.10	0.2	0.35	15.2	7.4	30	5	25	50	20	0	M	0.40	R	L	8						0	0	0	0	0.0	20	0	0	0	20	2				MB, MC, EB	N
Colt Creek	C4	2663	P	1	11	0	0.47	0.4	0.4	10.0	7.5	83	10	30	50	10	0	M	0.30	R	L	27	0.70	0.1	0.60	R		9	4	1	0	19.4	10	0	0	0	29	0				EB, PD	N
Colt Creek	C4	2674	R	1	23	3.5	0.10	0.35	0.45	8.9	6.3	145	10	15	65	10	0	H	0.40	R	L	27						1	1	0	0	0.9	10	0	0	0	11	0				EB	N
Colt Creek	C4	2697	G	1	5	1	0.21	0.25	0.4	8.9	3.1	15	10	20	50	20	0	M	0.35	R	L	4	0.40	0.13	0.27	R		5	2	2	1	26.9	20	0	0	0	47	0				EB	N
Colt Creek	C4	2702	R	1	16	2	0.13	0.25	0.3	14.0	2.5	40	5	20	45	30	0	M	0.30	R	L	9						0	0	0	0	0.0	30	0	0	0	30	0				MC, EB	N
Colt Creek	C4	2718	P	1	14	0	0.60	0.25	0.3	10.5	5.5	77	5	20	40	35	0	M	0.40	R	L	17	0.80	0.13	0.67	R	Y	18	11	5	2	36.8	35	0	0	0	72	0				MC, EB, JM	N
Colt Creek	C4	2732	R	1	8	5	0.13	0.4	0.3	9.3	3.4	27	10	25	40	25	0	M	0.35	R	L	7						0	0	0	0	0.0	25	0	0	0	25	0					N
Colt Creek	C4	2740	P	1	19	0	0.64	0.35	0.35	5.7	4.2	80	25	35	30	10	0	M	0.25	R	L	29	0.80	0.11	0.69	R		2	0	1	1	5.5	10	0	0	0	16	5				EB	N
Colt Creek	C4	2759	R	1	23	4.5	0.11	0.35	0.4	9.8	4.2	97	5	15	60	20	0	M	0.40	R	L	18						1	0	0	0	0.0	20	2	0	0	22	2				EB, PD	N
Colt Creek	C4	2782	G	1	22	1	0.19	0.4	0.3	5.4	2.7	59	20	30	45	5	0	M	0.25	R	L	19	0.40	0.1	0.30	R		5	1	1	0	2.5	5	0	0	0	8	0				PD	N
Colt Creek	C4	2804	R	1	26	3.5	0.13	0.4	0.3	5.4	2.5	65	5	15	60	20	0	M	0.40	R	L	12						13	9	2	2	30.3	20	0	0	0	50	0				SC, EB, JM	N
Colt Creek	C4	2830	G	1	38	1	0.24	0.3	0.4	7.0	3.6	137	20	30	45	5	0	M	0.40	R	L	45	0.45	0.14	0.31	R		0	0	0	0	0.0	5	2	0	0	7	2				EB	N
Colt Creek	C4	2868	R	1	63	3.5	0.14	0.25	0.3	14.5	11.0	693	5	15	30	5	0	M	0.50	R	L	116						4	0	0	0	0.0	5	0	0	0	5	2				EB, PD	N
Colt Creek	C4	2931	P	1	7	0	0.43	0.35	0.35	7.2	5.0	35	25	15	25	35	0	M	0.50	R	L	6	0.70	0.15	0.55	R	Y	3	0	0	0	0.0	35	15	0	0	50	20				EB, PD	N
Colt Creek	C4	2938	R	1	7	3	0.13	0.4	0.4	6.7	3.2	22	10	10	30	50	0	M	0.50	R	L	3						5	4	1	0	33.9	50	0	0	0	84	5				EB	N
Colt Creek	C4	2945	G	1	5	1.0	0.36	0.5	0.45	5.8	3.5	18	10	35	30	25	0	M	0.30	R	L	6	0.55	0.12	0.43	R	Y	0	0	0	0	0.0	25	30	0	0	55	0				EB	N
Colt Creek	C4	2950	R	1	19	3.0	0.12	0.5	0.45	6.4	3.1	59	10	15	35	40	0	M	0.50	R	L	10						0	0	0	0	0.0	40	0	0	0	40	2				EB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel			Pools Only					Functional LWD tally								Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Colt Creek	C4	2969	P	1	11	0.0	0.39	0.45	0.45	7.6	4.5	50	20	15	30	35	0	L	0.30	R	L	8	0.50	0.11	0.39	W	Y	12	8	4	0	36.8	35	0	0	0	72	0				EB	N
Colt Creek	C4	2980	R	1	8	5.0	0.11	0.45	0.5	8.3	5.5	44	10	15	35	40	0	M	0.63	R	L	8						0	0	0	0	0.0	40	2	0	0	42	2				EB	N
Colt Creek	C4	2988	P	1	17	0.0	0.48	0.35	0.5	7.3	4.8	81	10	30	45	15	0	M	0.35	R	L	26	0.90	0.12	0.78	R		2	2	0	0	1.5	15	15	0	0	31	0				EB	N
Colt Creek	C4	3005	R	1	42	6.0	0.12	0.4	0.4	12.3	3.8	160	5	10	45	40	0	M	0.50	R	L	20						0	0	0	0	0.0	40	0	0	0	40	0				EB	N
Colt Creek	C4	3047	P	1	10	0.0	0.66	0.4	0.4	8.0	3.7	37	10	20	45	25	0	M	0.30	R	L	8	1.30	0.12	1.18	R	Y	2	0	1	0	7.7	25	0	5	0	38	0				EB, PD	N
Colt Creek	C4	3057	R	1	28	2.0	0.12	0.45	0.35	7.0	4.3	120	5	20	35	40	0	M	0.50	R	L	27						0	0	0	0	0.0	40	0	0	0	40	2				EB	N
Colt Creek	C4	3085	G	1	21	1.0	0.20	0.45	0.4	7.3	3.7	78	10	25	40	25	0	M	0.45	R	L	21	0.35	0.07	0.28	R		1	0	0	0	0.0	25	0	0	0	25	2				EB, PD	N
Colt Creek	C4	3106	R	1	32	4.0	0.07	0.45	0.35	13.9	9.7	309	5	20	45	30	0	M	0.55	R	L	70						16	11	4	1	14.8	30	0	0	0	45	2				EB	N
Colt Creek	C5	0	R	1	33	4.0	0.13	0.45	0.4	9.2	7.3	239	5	20	45	30	0	M	0.80	R	L	54						0	0	0	0	0.0	30	0	0	0	30	2				EB	N
Colt Creek	C5	33	P	1	21	0.0	0.37	0.4	0.4	5.3	3.8	80	10	30	35	25	0	M	0.45	R	M	26	0.60	0.17	0.43	R		1	1	0	0	1.5	25	0	0	0	27	15				EB	N
Colt Creek	C5	54	R	1	8	3.5	0.17	0.45	0.25	11.5	2.9	23	5	25	40	30	0	M	0.40	R	L	6						0	0	0	0	0.0	30	0	0	0	30	10				EB	N
Colt Creek	C5	62	G	1	50	1.5	0.23	0.4	0.25	10.0	4.7	235	5	15	55	25	0	M	0.45	R	M	43	0.43	0.15	0.28	R		0	0	0	0	0.0	25	0	0	0	25	5				EB	N
Colt Creek	C5	112	R	1	9	3.0	0.17	0.3	0.35	9.8	4.6	41	5	25	40	30	0	M	0.45	R	M	11						0	0	0	0	0.0	30	0	0	0	30	2				MB, MC, EB	N
Colt Creek	C5	121	G	1	40	1.0	0.16	0.4	0.3	10.4	7.3	292	5	35	50	10	0	M	0.35	R	M	111	0.30	0.19	0.11	R		0	0	0	0	0.0	10	0	0	0	10	0					N
Colt Creek	C5	161	R	1	6	2.5	0.11	0.25	0.35	8.4	6.7	40	5	20	25	50	0	M	0.65	R	M	9						0	0	0	0	0.0	50	0	0	0	50	2					N
Colt Creek	C5	167	G	1	69	1.0	0.25	0.35	0.4	9.0	6.2	428	10	25	45	20	0	M	0.35	R	M	119	0.45	0.12	0.33	R		0	0	0	0	0.0	20	0	0	0	20	15					N
Colt Creek	C5	236	R	1	10	3.0	0.12	0.35	0.25	10.1	7.7	77	10	20	25	45	0	M	0.70	R	M	17						5	2	3	0	8.6	45	0	0	0	54	5				EB	N
Colt Creek	C5	246	G	1	49	1.0	0.34	0.25	0.45	7.3	4.3	211	10	25	20	45	0	M	0.50	R	M	55	0.40	0.15	0.25	R		0	0	0	0	0.0	45	0	0	0	45	10				EB	N
Colt Creek	C5	295	R	1	5	4.0	0.15	0.3	0.3	10.4	8.2	41	5	10	20	65	0	M	0.70	R	L	5						0	0	0	0	0.0	65	0	0	0	65	30					N
Colt Creek	C5	300	P	1	110	0.0	0.38	0.3	0.3	7.7	7.0	770	5	45	20	30	0	M	0.40	R	M	356	0.55	0.19	0.36	R	Y	1	0	0	0	0.0	30	0	0	0	30	25				PD	N
Colt Creek	C5	410	R	1	10	3.5	0.19	0.4	0.35	6.8	5.1	51	10	15	15	60	0	M	1.00	R	M	8						0	0	0	0	0.0	60	0	0	0	60	50					N
Colt Creek	C5	420	P	1	10	0.0	0.31	0.35	0.35	10.1	9.7	97	5	25	20	50	0	M	0.60	R	M	25	0.65	0.17	0.48	R	Y	2	0	0	0	0.0	50	0	0	0	50	10				MB, EB, PD	N
Colt Creek	C5	430	G	1	19	1.0	0.32	0.39	0.35	7.0	5.1	97	5	20	15	60	0	M	0.85	R	M	20	0.55	0.17	0.38	R	Y	0	0	0	0	0.0	60	0	0	0	60	35				EB	N
Colt Creek	C5	449	C	1	13	7.0	0.17	0.2	0.35	9.7	7.5	97	5	5	20	70	0	M	1.00	R	L	6						1	0	0	0	0.0	70	0	0	0	70	25				PD	N
Colt Creek	C5	462	G	1	74	1.5	0.26	0.25	0.2	7.8	5.9	437	10	20	40	30	0	M	0.60	R	L	98	0.40	0.35	0.05	R		1	0	0	0	0.0	30	0	0	0	30	2				PD	N
Colt Creek	C5	536	R	1	13	2.5	0.22	0.35	0.4	6.3	4.8	62	10	15	30	45	0	M	0.65	R	L	10						1	1	0	0	0.2	45	0	0	0	45	2					N
Colt Creek	C5	549	G	1	51	1.0	0.26	0.2	0.2	9.0	8.0	408	20	20	38	20	2	M	0.45	R	L	91	0.65	0.24	0.41	R		0	0	0	0	0.0	20	2	0	0	22	5					N
Colt Creek	C5	600	R	1	9	3.0	0.24	0.3	0.25	7.4	5.3	48	5	40	25	30	0	M	0.70	R	M	20						1	0	0	0	0.0	30	0	0	0	30	5				PD	N
Kobes Creek	K6	0	P	1	114	0.5	0.70	0.40	0.40	1.1	9.4	1072	65	10	20	5	0	M	0.40	R	L	120	1.50	0.11	1.39	R		9	8	1	0	2.3	5	0	5	0	12	2				EB	N
Kobes Creek	K6	114	R	1	7	1	0.11	0.40	0.25	12.2	10.1	10	10	55	30	5	0	M	0.40	R	L	40						0	0	0	0	0.0	5	0	0	0	5	2				EB	N
Kobes Creek	K6	121	G	1	48	0.5	0.31	0.35	0.30	15.8	10.6	509	10	30	50	10	0	M	0.50	R	L	168	0.55	0.08	0.47	R		0	0	0	0	0.0	10	2	0	0	12	5				EB	N
Kobes Creek	K6	169	R	1	8	2	0.08	0.20	0.30	10.3	6.4	51	5	20	60	15	0	M	0.50	R	L	12						0	0	0	0	0.0	15	2	0	0	17	10					N
Kobes Creek	K6	177	P	1	33	0.0	0.41	0.35	0.30	9.8	5.4	178	20	20	50	10	0	M	0.55	R	L	41	0.85	0.08	0.77	R		0	0	0	0	0.0	10	0	0	0	10	2				EB	N
Kobes Creek	K6	210	G	1	65	0.5	0.24	0.40	0.50	10.3	6.0	390	30	25	35	10	0	H	0.50	R	L	106	0.35	0.08	0.27	R		1	0	0	0	0.0	10	0	0	0	10	10				EB, PD	N
Kobes Creek	K6	275	R	1	8	2.0	0.07	0.40	0.40	12.3	4.1	33	5	40	50	5	0	M	0.30	R	M	14						2	2	0	0	6.4	5	0	0	0	11	10				EB	N
Kobes Creek	K6	283	P	1	30	0.0	0.58	0.40	0.30	14.5	11.3	339	30	35	25	10	0	M	0.30	R	L	124	1.05	0.19	0.86	R		0	0	0	0	0.0	10	2	8	0	20	0				EB	N
Kobes Creek	K6	313	R	1	8	1.0	0.19	0.20	0.35	11.3	4.2	33	5	25	40	30	0	L	0.40	R	L	9						0	0	0	0	0.0	30	2	0	0	32	0				EB	N
Kobes Creek	K6	321	G	1	19	0.5	0.32	0.30	0.50	11.6	6.7	126	10	20	60	10	0	M	0.40	R	L	30	0.50	0.09	0.41	R		0	0	0	0	0.0	10	0	0	0	10	2				EB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally										Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	K6	340	R	1	18	0.5	0.09	0.30	0.45	12.8	9.8	176	5	25	70	0	0	L	0.20	R	H	52						1	1	0	0	0.3	0	0	0	0	0	5					N
Kobes Creek	K6	358	P	1	86	0.0	0.74	0.30	0.50	10.0	6.8	585	25	15	60	0	0	M	0.20	R	M	109	1.10	0.08	1.02	R	Y	26	12	10	2	8.1	0	0	10	0	18	30				EB	N
Kobes Creek	K6	444	R	1	18	2.0	0.08	0.15	0.25	14.4	13.0	234	5	5	0	40	5	0	L	R	M	12						1	1	0	0	0.1	40	0	0	0	40	5				EB, MC, MB	N
Kobes Creek	K6	462	G	1	22	0.5	0.14	0.20	0.25	14.0	13.5	297	15	33	50	2	0	M	0.35	R	L	107	0.50	0.09	0.41			2	0	0	0	0.0	2	2	0	0	4	15				EB, PD	N
Kobes Creek	K6	484	R	1	4	1.0	0.12	0.35	0.15	14.0	7.3	29	5	35	60	0	0	L	0.25	R	H	11						0	0	0	0	0.0	0	0	0	0	0	0					N
Kobes Creek	K6	488	P	1	79	0.0	0.99	0.35	0.30	7.3	6.9	545	40	20	35	5	0	M	0.20	R	M	120	1.45	0.09	1.36	R		2	1	0	0	0.1	5	2	10	0	17	2				EB, PD	N
Kobes Creek	K6	567	G	1	32	0.5	0.26	0.40	0.25	10.9	8.8	282	15	15	50	20	0	M	0.50	R	L	51	0.45	0.11	0.34	R		2	2	0	0	0.6	20	0	0	0	21	5					N
Kobes Creek	K6	599	R	1	9	1.5	0.11	0.40	0.20	11.7	6.6	59	5	10	50	35	0	M	0.50	R	M	8						2	1	0	0	1.0	35	0	0	0	36	5				PD	N
Kobes Creek	K6	608	G	1	30	0.5	0.56	0.30	0.50	12.8	8.7	260	15	35	40	10	0	M	0.50	R	L	97	0.80	0.09	0.71	R		2	2	2	2	0.9	10	2	0	0	13	2				EB	N
Kobes Creek	K6	638	P	1	20	0.0	0.82	0.30	0.25	15.0	12.0	240	40	10	45	5	0	M	0.20	R	L	30	1.00	0.09	0.91	R	Y	0	0	0	0	0.0	5	2	5	0	2	50					N
Kobes Creek	K6	658	R	1	3	2.0	0.09	0.25	0.30	12.4	8.5	26	5	30	40	25	1	M	0.60	R	M	8						0	0	0	0	0.0	25	0	0	0	0	0					
Kobes Creek	K6	661	G	1	17	0.5	0.34	0.45	0.30	10.0	6.0	102	15	30	25	30	2	M	0.45	R	L	32	0.55	0.09	0.46	R	Y	0	0	0	0	0.0	30	0	2	0	32	40				EB	N
Kobes Creek	K6	678	R	1	14	1.5	0.09	0.60	0.40	13.0	7.4	104	5	35	45	15	3	M	0.40	R	M	39						0	0	0	0	0.0	15	0	0	0	15	0				EB	N
Kobes Creek	K6	692	G	1	27	0.5	0.28	0.40	0.35	12.3	8.7	235	15	25	40	20	4	M	0.60	R	L	64	0.40	0.17	0.23	R		3	1	0	0	8.6	20	0	0	15	44	0				EB, PD	N
Kobes Creek	K6	719	R	1	17	2.0	0.14	0.25	0.20	12.4	10.6	180	5	10	35	50	0	M	0.80	R	M	22						1	0	0	0	0.0	50	0	0	50	100	0				PD	N
Kobes Creek	K6	736	G	1	18	0.5	0.22	0.30	0.30	13.3	8.6	155	5	10	35	50	0	L	0.60	R	M	19	0.45	0.08	0.37	R		0	0	0	0	0.0	50	0	0	15	65	0					N
Kobes Creek	K6	754	P	1	78	0.0	0.63	0.45	0.30	14.5	10.9	850	20	10	20	50	0	M	0.80	R	L	95	0.90	0.08	0.82	R	Y	2	2	0	0	0.4	50	5	0	10	65	5					N
Kobes Creek	K6	832	G	1	29	0.5	0.24	0.50	0.40	13.0	9.7	281	40	10	40	10	0	M	0.45	R	L	35	0.40	0.08	0.32	R		0	0	0	0	0.0	10	0	0	0	0	40				EB	N
Kobes Creek	K6	861	R	1	9	2.5	0.08	0.20	0.30	10.2	12.2	110	10	15	55	20	0	M	0.50	R	M	20						0	0	0	0	0.0	20	0	0	5	25	0				EB	N
Kobes Creek	K6	870	G	1	30	1.0	0.35	0.40	0.60	11.0	6.2	186	20	15	60	5	0	M	0.40	R	L	35	0.60	0.15	0.45	R		0	0	0	0	0.0	5	0	0	0	5	0				EB	N
Kobes Creek	K6	900	R	1	12	2.5	0.15	0.25	0.50	9.3	6.8	82	10	15	55	20	0	M	0.30	R	L	15						0	0	0	0	0.0	20	0	0	5	25	0				EB	N
Kobes Creek	K6	912	P	1	48	0.0	0.45	0.25	0.30	10.8	7.9	379	20	15	35	30	0	M	0.50	R	L	65	0.65	0.13	0.52	R		4	0	3	0	8.3	30	0	0	5	43	0				PD	N
Kobes Creek	K6	960	R	1	4	1.5	0.13	0.60	0.30	10.6	5.2	21	10	10	70	10	0	M	0.40	R	L	3						3	3	0	0	21.6	10	0	0	5	37	20					N
Kobes Creek	K6	964	G	1	51	1.0	0.22	0.45	0.45	11.6	11.0	561	25	25	35	15	0	H	0.45	R	L	152	0.40	0.14	0.26	R		2	1	0	0	0.1	15	2	0	2	19	10				EB, PD	N
Kobes Creek	K6	1015	R	1	7	1.5	0.14	0.30	0.40	11.4	7.0	49	10	30	50	10	0	M	0.40	R	M	16						0	0	0	0	0.0	10	0	0	5	15	0					N
Kobes Creek	K6	1022	G	1	28	1.0	0.37	0.30	0.40	10.7	5.3	148	20	20	50	10	0	M	0.40	R	L	34	0.40	0.08	0.32	R		5	2	2	1	14.3	10	0	0	5	29	10					N
Kobes Creek	K6	1050	R	1	13	1.5	0.08	0.35	0.35	14.3	11.3	147	15	45	30	10	0	H	0.40	R	L	69						1	0	0	0	0.0	10	0	0	5	15	0				PD	N
Kobes Creek	K6	1063	P	1	13	0.0	0.33	0.45	0.35	11.0	8.3	108	20	40	25	15	0	M	0.35	R	L	45	0.70	0.17	0.53	R		3	0	0	0	0.0	15	5	0	0	20	0				PD	N
Kobes Creek	K6	1076	R	1	5	1.5	0.13	0.55	0.25	10.0	7.5	38	5	15	50	30	0	M	0.50	R	H	7						0	0	0	0	0.0	30	0	0	25	55	0				EB	N
Kobes Creek	K6	1081	G	1	14	0.5	0.40	0.45	0.30	8.9	7.4	104	10	15	55	20	0	H	0.60	R	L	19	0.52	0.10	0.42	R		0	0	0	0	0.0	20	0	0	5	25	15					N
Kobes Creek	K6	1095	R	1	29	2.0	0.09	0.25	0.35	16.8	15.0	435	5	30	60	5	0	M	0.35	R	L	146						1	0	0	0	0.0	5	0	0	0	5	10				MB, PD	N
Kobes Creek	K6	1124	P	1	35	0.0	0.65	0.40	0.40	11.3	9.6	336	50	10	25	15	0	H	0.60	R	L	39	1.20	0.35	0.85	R		8	0	2	0	1.0	15	0	5	2	23	0				PD	N
Kobes Creek	K6	1159	G	1	9	1.0	0.28	0.30	0.30	9.0	5.6	50	10	10	30	50	0	L	0.50	R	M	6	0.45	0.35	0.10	R	Y	0	0	0	0	0.0	50	20	0	0	70	0					N
Kobes Creek	K6	1168	P	1	14	0.0	0.79	0.30	0.40	10.4	6.6	92	10	10	30	50	0	L	0.50	R	M	11	1.50	0.15	1.35	R	Y	0	0	0	0	0.0	50	0	10	0	60	0					N
Kobes Creek	K6	1182	G	1	56	1.5	0.36	0.30	0.50	7.3	3.5	193	40	15	35	10	0	M	0.30	R	L	33	0.75	0.21	0.54	R		10	5	2	0	6.7	10	0	0	0	17	10				PD	N
Kobes Creek	K6	1238	R	1	4	1.0	0.07	0.30	0.60	6.8	5.4	22	5	60	35	0	0	M	0.25	R	M	13						0	0	0	0	0.0	0	0	0	0	0	10				EB	N
Kobes Creek	K6	1242	G	1	37	1.0	0.21	0.30	0.40	9.9	4.0	148	15	50	35	0	0	M	0.30	R	M	77	0.50	0.09	0.41	R		1	1	0	0	0.2	0	2	0	0	2	55					N
Kobes Creek	K6	1279	R	1	61	1.5	0.09	0.50	0.35	10.5	10.5	641	5	20	60	15	0	M	0.40	R	M	151						0	0	0	0	0.0	15	0	0	5	20	40					N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	K6	1340	P	1	28	0.0	0.61	0.30	0.25	7.7	5.7	160	60	10	30	0	0	M	0.30	R	L	19	1.50	0.11	1.39	R		5	1	4	0	3.6	0	0	10	0	14	10					N
Kobes Creek	K6	1368	G	1	43	1.0	0.13	0.35	0.30	7.3	2.8	120	5	60	35	0	0	M	0.30	R	M	75	0.50	0.11	0.39	R		0	0	0	0	0.0	0	5	0	0	5	5				EB	N
Kobes Creek	K6	1411	P	1	14	0.0	0.53	0.35	0.40	9.3	4.5	63	10	30	55	5	0	M	0.35	R	M	21	0.75	0.10	0.65	R		0	0	0	0	0.0	5	10	0	0	15	0				EB,	N
Kobes Creek	K6	1425	R	1	2	1.5	0.11	0.30	0.35	7.0	3.0	6	10	30	60	0	0	M	0.20	R	M	2				R		0	0	0	0	0.0	0	0	0	0	0	2				MB,EB	N
Kobes Creek	K6	1427	P	1	24	0.0	0.59	0.25	0.40	9.1	6.9	166	60	15	20	5	0	M	0.40	R	L	27	0.95	0.08	0.87	R	Y	13	8	3	2	15.9	5	0	0	0	21	35					N
Kobes Creek	K6	1451	R	1	15	2.0	0.08	0.30	0.40	14.2	10.5	158	20	48	30	2	0	M	0.35	R	L	78						2	0	0	0	0.0	2	0	0	0	2	5				MB, MC, PD	N
Kobes Creek	K6	1466	P	1	17	0.0	0.52	0.45	0.30	10.6	7.8	133	5	10	80	5	0	M	0.35	R	M	20	0.60	0.07	0.53	R		14	8	5	1	22.3	5	0	0	0	27	20					N
Kobes Creek	K6	1483	R	1	15	5.0	0.07	0.30	0.30	16.5	5.8	87	5	55	38	2	0	M	0.40	R	M	50						0	0	0	0	0.0	2	0	0	0	2	0				MB	N
Kobes Creek	K6	1498	P	1	32	0.0	0.51	0.35	0.60	13.8	5.4	173	65	10	20	5	0	H	0.40	R	L	19	0.90	0.19	0.71	R	Y	15	13	2	0	9.2	5	20	0	0	34	55				EB	N
Kobes Creek	K6	1530	R	1	6	2.5	0.19	0.35	0.35	9.8	3.6	22	5	40	55	0	0	M	0.40	R	M	9						0	0	0	0	0.0	0	0	0	0	0	5				MB,EB	N
Kobes Creek	K6	1536	P	1	16	0.0	0.42	0.35	0.50	6.6	4.7	74	50	20	30	0	0	M	0.35	R	L	16	0.60	0.08	0.52	R		3	0	0	0	0.0	0	0	0	0	0	30				EB, PD	N
Kobes Creek	K6	1552	R	1	9	2.0	0.08	0.65	0.35	7.9	3.8	34	5	40	55	0	0	M	0.35	R	M	15						1	0	0	0	0.0	0	0	0	0	0	2				MB, MC, EB, PD	N
Kobes Creek	K6	1561	P	1	9	0.0	0.42	0.35	0.40	9.1	4.1	37	35	20	45	0	0	M	0.30	R	L	8	0.70	0.08	0.62	R		4	1	1	0	3.5	0	0	0	0	4	10				EB, PD	N
Kobes Creek	K6	1570	G	1	17	1.0	0.25	0.50	0.70	5.5	3.2	54	10	15	75	0	0	M	0.20	R	M	11	0.40	0.08	0.32			18	12	2	4	45.0	0	0	0	0	45	5				EB, JM	N
Kobes Creek	K6	1587	P	1	17	0.0	0.72	0.50	0.50	6.5	6.0	102	60	15	25	0	0	L	0.15	R	L	32	1.00	0.08	0.92		Y	16	11	6	0	18.4	0	20	2	0	40	40				EB, JM	N
Kobes Creek	K6	1604	G	1	18	1.0	0.24	0.35	0.50	7.5	5.0	90	50	30	20	0	0	M	0.15	R	L	73	0.55	0.08	0.47			12	9	1	2	17.8	0	2	0	0	20	10				EB, MB, JM	N
Kobes Creek	K6	1622	R	1	17	1.5	0.08	0.30	0.50	6.0	3.5	59	10	80	10	0	0	M	0.08	R	M	47						5	0	0	0	0.0	0	0	0	0	0	5				EB, PD	N
Kobes Creek	K6	1639	P	1	58	0.0	0.27	0.45	0.40	5.6	3.9	226	50	35	15	0	0	L	0.50	R	L	81	0.42	0.10	0.32	R		0	0	0	0	0.0	0	5	0	0	5	0	SC	N		MC	N
Kobes Creek	K6	1647	R	1	14	2.0	0.10	0.45	0.30	7.0	2.1	29	10	60	30	0	0	L	0.10	R	M	18						2	0	0	0	0.0	0	2	0	0	2	5				MB, PD	N
Kobes Creek	K6	1661	G	1	32	1.0	0.14	0.30	0.30	0.4	4.7	4	20	50	30	0	0	M	0.15	R	L	78	0.40	0.32	0.08	W		2	0	2	0	1.9	0	5	0	0	7	0				MC, EB	N
Kobes Creek	K6	1693	P	1	11	0.0	0.65	0.45	0.50	5.5	4.4	48	45	50	15	0	0	L	0.10	R	L	25	0.80	0.10	0.70	R		1	0	0	0	0.0	0	0	0	0	0	30				PD	N
Kobes Creek	K6	1704	G	1	196	1.0	0.28	0.40	0.25	6.3	5.0	980	60	30	10	0	0	L	0.08	R	L	300	0.40	0.10	0.30	W	Y	999				82.9	0	0	0	0	83					EB, MC, JM, PD	N
Kobes Creek	K6	1900	P	1	125	0.0	0.00	0.45	4.00	15.5	10.0	1250	90	10	0	0	0	L	0.05	R	L	125	1.05	0.06	0.99	R		0	0	0	0	0.0	0	0	2	0	2	0				EB	N
Kobes Creek	K6	2025	R	1	23	2.5	0.06	0.40	0.25	15.0	8.7	200	10	38	50	2	0	M	0.25	R	M	82						0	0	0	0	0.0	2	0	0	0	2	0				EB	N
Kobes Creek	K6	2048	G	1	9	1.0	0.19	0.40	0.20	6.4	3.7	33	15	30	55	0	0	L	0.25	R	L	11	0.63	0.11	0.52	R		2	0	0	0	0.0	0	0	0	0	0	0	SC	P		PD	N
Kobes Creek	K6	2057	R	1	7	2.0	0.11	0.30	0.30	7.8	3.6	25	10	48	40	2	0	M	0.30	R	M	13						0	0	0	0	0.0	2	0	0	0	2	0					N
Kobes Creek	K6	2064	P	1	20	0.0	0.48	0.40	0.50	12.1	4.4	88	20	50	30	0	0	M	0.20	R	L	46	0.60	0.06	0.54	R		0	0	0	0	0.0	0	0	0	0	0	0					N
Kobes Creek	K6	2084	R	1	3	2.5	0.06	0.20	0.30	12.8	7.1	21	10	50	40	0	0	M	0.25	R	M	11						0	0	0	0	0.0	0	0	0	0	0	0					N
Kobes Creek	K6	2087	P	1	77	0.0	1.07	0.4	0.30	8.5	7.0	539	65	25	10	0	0	L	0.20	R	L	138	1.50	0.09	1.41	W	Y	61	30	21	10	28.7	0	0	0	0	29	0	SC	G			N
Kobes Creek	K6	2164	R	1	21	1.5	0.09	0.20	0.50	14.1	2.6	55	25	60	15	0	0	L	0.25	R	L	33						9	6	1	0	13.7	0	0	0	0	14	50				EB, PD	N
Kobes Creek	K6	2185	P	1	33	0.0	0.83	0.70	0.30	11.4	7.4	244	25	23	50	2	0	M	0.20	R	L	63	1.00	0.07	0.93	R	Y	3	0	3	0	6.9	2	0	0	0	9	25				EB	N
Kobes Creek	K6	2218	R	1	27	1.0	0.07	0.20	0.20	13.8	13.0	351	15	30	50	50	0	H	0.35	R	L	116						0	0	0	0	0.0	50	2	0	0	52	2				MB, EB	N
Kobes Creek	K6	2245	P	1	84	0.0	0.45	0.40	0.25	13.3	10.9	11	20	25	50	5	0	H	0.35	R	L	256	1.50	0.08	1.42	R		8	3	5	0	1.7	5	5	5	0	17	2				EB	N
Kobes Creek	K6	2329	R	1	7	1.5	0.08	0.50	0.20	11.6	9.2	64	10	38	50	2	0	H	0.25	R	L	26						0	0	0	0	0.0	2	0	0	0	2	0					N
Kobes Creek	K6	2336	P	1	44	0.0	0.38	0.25	0.30	10.3	6.8	299	25	20	55	5	0	H	0.35	R	L	70	0.60	0.08	2.00	W		7	5	2	0	9.8	5	0	0	0	15	15				EB	N
Kobes Creek	K6	2380	R	1	5	4.0	0.08	0.30	0.25	14.1	7.0	35	5	35	55	5	0	L	0.40	R	M	13						0	0	0	0	0.0	5	0	0	0	5	0				EB	N
Kobes Creek	K6	2385	G	1	28	1.0	0.22	0.25	0.40	12.0	7.8	218	15	30	50	5	0	H	0.40	R	M	72	0.70	0.09	0.61	R		0	0	0	0	0.0	5	0	0	0	5	2				EB	N
Kobes Creek	K6	2413	R	1	31	2.0	0.09	0.25	0.45	11.8	10.7	332	5	40	45	10	0	L	0.50	R	M	142						5	2	3	0	10.4	10	0	0	0	20	0				MB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	K6	2444	P	1	70	0.0	0.49	0.35	0.30	10.1	8.7	609	20	30	45	5	0	M	0.35	R	L	199	1.40	0.06	1.34	R		3	3	0	0	0.7	5	0	0	0	6	5				EB	N
Kobes Creek	K6	2514	R	1	27	1.5	0.06	0.45	0.40	13.1	7.4	200	10	35	50	5	0	M	0.40	R	L	76						3	0	0	0	0.0	5	0	0	0	5	0				MB, EB, PD	N
Kobes Creek	K6	2541	P	1	41	0.0	0.33	0.35	0.20	16.0	12.5	513	60	25	10	5	0	M	0.40	R	L	131	0.50	0.08	0.42	R		0	0	0	0	0.0	5	0	0	0	5	0				MB, EB	N
Kobes Creek	K6	2582	R	1	15	1.0	0.08	0.25	0.20	16.7	16.2	243	5	55	40	0	0	H	0.25	R	L	139						0	0	0	0	0.0	0	0	0	0	0	0				MB, EB	N
Kobes Creek	K6	2597	P	1	67	0.0	0.36	0.30	0.25	10.5	9.5	637	30	25	35	10	0	H	0.45	R	L	172	0.55	0.26	0.29	R		0	0	0	0	0.0	10	0	0	0	10	2				EB	N
Kobes Creek	K6	2664	G	1	47	1.0	0.26	0.50	0.55	8.0	5.8	273	20	25	45	10	0	M	0.50	R	L	76	0.40	0.25	0.15	R		6	3	0	0	4.1	10	0	0	0	14	5				EB, PD	N
Kobes Creek	K6	2711	P	1	34	0.0	0.56	0.50	0.45	9.9	7.0	238	20	15	60	5	0	M	0.40	R	L	44	0.90	0.08	0.82	R	Y	17	6	8	3	20.0	5	0	0	0	25	30				EB	N
Kobes Creek	K6	2745	R	1	9	5.0	0.08	0.35	0.25	8.2	4.4	40	8	40	50	2	0	M	0.35	R	L	17						0	0	0	0	0.0	2	0	0	0	2	0				MC, EB	N
Kobes Creek	K6	2754	P	1	34	0.0	0.83	0.60	0.40	7.1	6.2	211	60	30	10	0	0	L	0.10	R	L	65	1.40	0.07	1.33	R		8	2	2	0	1.7	0	10	0	0	12	5				EB, PD	N
Kobes Creek	K6	2788	R	1	17	4.5	0.07	0.60	0.40	13.4	12.3	209	10	50	35	5	0	H	0.40	R	L	109						4	0	0	0	0.0	5	0	0	0	5	2				SC, MB, EB, PD	N
Kobes Creek	K6	2805	G	1	25	1.0	0.16	0.20	0.20	12.5	12.0	300	20	50	25	5	0	M	0.30	R	M	155	0.35	0.10	0.25	R		0	0	0	0	0.0	5	0	0	2	7	0				SC	N
Kobes Creek	K6	2830	R	1	3	1.5	0.07	0.20	0.20	6.0	3.0	9	5	35	60	0	0	M	0.25	R	M	3						0	0	0	0	0.0	0	0	0	0	0	2					N
Kobes Creek	K6	2833	P	1	64	0.0	0.66	0.50	0.50	10.6	7.5	480	60	15	25	0	0	M	0.20	R	M	79	1.00	0.08	0.92	R		3	0	0	0	0.0	0	0	0	2	2	5				PD	N
Kobes Creek	K6	2897	R	1	13	2.5	0.08	0.50	0.40	17.6	11.0	143	10	35	50	50	0	M	0.35	R	L	54						10	0	0	0	0.0	50	0	0	0	50	5				EB, PD	N
Kobes Creek	K6	2910	P	1	58	0.0	0.47	0.25	0.40	7.7	5.1	296	30	35	30	5	0	H	0.30	R	L	109	1.00	0.19	0.81	W	Y	14	5	7	2	9.5	5	0	0	0	15	40					N
Kobes Creek	K6	2968	G	1	7	1.0	0.19	0.30	0.40	12.0	2.5	18	5	55	40	0	0	L	0.25	R	M	10	0.28	0.20	0.08	W		2	0	2	0	12.0	0	0	0	0	12	0				EB	N
Kobes Creek	K6	2975	P	1	32	0.0	0.71	0.30	0.30	10.4	8.0	256	40	30	20	10	0	L	0.50	R	L	80	1.30	0.10	1.20	R		1	0	1	0	0.4	10	5	8	2	25	0				EB	N
Kobes Creek	K6	3007	G	1	16	1.0	0.00	0.40	0.20	16.3	8.4	134	10	40	50	0	0	M	0.30	R	L	58	0.20	0.10	0.10	R		0	0	0	0	0.0	0	0	0	0	0	0				EB	N
Kobes Creek	K6	3023	P	1	74	0.0	0.52	0.30	0.40	10.4	6.8	503	40	20	40	0	0	M	0.25	R	L	113	1.20	0.10	1.10	R		14	0	0	0	0.0	0	0	10	0	10	0				EB, PD	N
Kobes Creek	K6	3097	R	1	17	2.0	0.10	0.30	0.50	9.8	3.0	51	5	40	50	5	0	M	0.30	R	M	22						0	0	0	0	0.0	5	0	0	0	5	2				EB	N
Kobes Creek	K6	3114	G	1	46	1.5	0.40	0.35	0.60	10.5	4.5	207	10	45	40	5	0	H	0.20	R	L	98	0.52	0.09	0.43	R		0	0	0	0	0.0	5	0	0	0	5	2				EB	N
Kobes Creek	K6	3160	R	1	59	1.5	0.09	0.40	0.40	11.0	10.5	617	15	50	35	10	0	M	0.40	R	L	321						1	0	0	0	0.0	10	0	0	0	10	2				PD	N
Kobes Creek	K6	3219	G	1	26	1.0	0.26	0.30	0.30	10.0	7.3	190	20	30	95	5	0	M	0.45	R	M	68	0.35	0.07	0.28	R		0	0	0	0	0.0	5	5	0	0	10	0				EB	N
Kobes Creek	K6	3245	R	1	10	2.0	0.07	0.45	0.30	13.3	12.3	123	10	40	45	5	0	M	0.40	R	L	53						2	0	0	0	0.0	5	0	0	0	5	2				MB, EB, PD	N
Kobes Creek	K6	3255	G	1	35	0.5	0.33	0.55	0.40	12.5	6.0	210	15	25	40	20	0	H	0.45	R	L	58	0.50	0.45	0.05	R		1	0	0	0	0.0	20	0	0	0	20	2				EB, PD	N
Kobes Creek	K6	3290	P	1	18	0.0	0.56	0.50	0.40	12.5	6.8	122	35	25	30	10	0	M	0.45	R	L	33	0.78	0.09	0.69	R		4	0	0	0	0.0	10	0	0		10	2				EB, PD	N
Kobes Creek	K6	3308	R	1	7	3.5	0.09	0.50	0.40	12.5	8.7	61	5	50	35	10	0	M	0.45	R	M	32						1	0	0	0	0.0	10	0	0	0	10	2				PD	N
Kobes Creek	K6	3315	P	1	60	0.0	0.28	0.30	0.40	9.5	4.1	246	10	50	30	10	0	L	0.35	R	M	127	0.70	0.10	0.60	R		8	0	0	0	0.0	10	5	0	0	15	2				EB, PD	N
Kobes Creek	K6	3375	R	1	33	2.0	0.10	0.60	0.35	8.4	6.3	208	5	45	48	2	0	L	0.30	R	M	100						0	0	0	0	0.0	2	0	0	0	2	2				EB, SC	N
Kobes Creek	K6	3408	G	1	22	0.5	0.46	0.40	0.40	7.9	12.1	266	30	25	40	50	0	M	0.25	R	L	73	0.85	0.30	0.55	R	Y	0	0	0	0	0.0	50	0	0	0	50	0				EB	N
Kobes Creek	K6	3430	P	1	22	0.0	0.88	0.55	0.35	10.9	10.4	229	50	30	20	0	0	M	0.20	R	L	71	1.50	0.10	1.40	R		18	12	5	1	18.8	0	0	12	0	31	0				EB	N
Kobes Creek	K6	3452	R	1	10	1.0	0.09	0.35	0.25	12.8	8.0	80	10	40	45	5	0	L	0.25	R	L	34						0	0	0	0	0.0	5	0	0	0	5	0				EB	N
Kobes Creek	K6	3462	G	1	48	0.5	0.42	0.35	0.35	13.9	4.8	230	20	35	40	5	0	L	0.25	R	L	86	0.55	0.06	0.49	R		0	0	0	0	0.0	5	2	0	0	7	0				EB	N
Kobes Creek	K6	3510	R	1	10	2.0	0.06	0.50	0.30	16.5	6.5	65	15	48	35	2	0	L	0.25	R	M	33						0	0	0	0	0.0	2	0	0	0	2	0				EB	N
Kobes Creek	K6	3520	P	1	35	0.0	0.56	0.40	0.60	10.3	7.8	273	25	30	40	5	0	M	0.30	R	M	88	1.20	0.09	1.11	W		13	3	2	0	7.1	5	0	5	0	0	0				EB, PD	N
Kobes Creek	K6	3555	R	1	33	1.5	0.09	0.25	0.40	11.1	8.8	290	20	25	45	10	0	M	0.50	R	L	80						0	0	0	0	0.0	10	0	0	0	10	2				EB	N
Kobes Creek	K6	3588	G	1	24	1.0	0.32	0.50	0.45	13.5	4.8	115	10	50	35	5	0	M	0.40	R	M	60	0.45	0.10	1.00	R		1	0	1	0	3.0	5	0	0	0	8	10				EB	N
Kobes Creek	K6	3612	R	1	15	2.0	0.09	0.35	0.40	14.4	9.2	138	10	48	40	2	0	L	0.25	R	M	70						0	0	0	0	0.0	2	0	0	0	2	0				MB, EB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel					Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	K6	3627	G	1	28	1.0	0.21	0.60	0.40	10.9	6.0	168	20	25	50	5	0	M	0.30	R	L	47	0.40	0.16	0.24	R		0	0	0	0	0.0	5	2	0	0	7	2				EB	N
Kobes Creek	K6	3655	P	1	15	0.0	0.77	0.45	0.45	7.6	4.8	72	30	20	50	0	0	M	0.20	R	L	17	1.25	0.16	1.09	R		3	1	1	0	5.6	0	5	7	0	18	2				EB, PD	N
Kobes Creek	K6	3670	G	1	50	1.0	0.25	0.35	0.35	8.9	4.6	230	25	30	35	10	0	H	0.35	R	L	74	0.30	0.16	0.14	R		5	1	0	0	0.1	10	0	0	0	10	2				EB, PD	N
Kobes Creek	K6	3720	R	1	22	1.5	0.16	0.60	0.35	9.7	3.2	70	10	30	50	10	0	M	0.40	R	L	23						1	1	0	0	1.3	10	0	0	0	11	2				EB	N
Kobes Creek	K6	3742	G	1	12	1.0	0.24	0.45	0.20	10.5	5.1	61	40	40	20	0	0	M	0.20	R	M	25	0.31	0.06	0.25	R		0	0	0	0	0.0	0	5	0	0	5	10				EB	N
Kobes Creek	K6	3754	R	1	3	4.0	0.06	0.25	0.25	18.2	10.2	31	5	55	38	2	0	L	0.20	R	M	18						0	0	0	0	0.0	2	0	0	0	2	0				EB	N
Kobes Creek	K6	3757	G	1	16	1.0	0.26	0.30	0.25	8.0	3.1	50	15	75	10	0	0	L	0.20	R	L	37	0.30	0.10	0.20	R		0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Kobes Creek	K6	3773	R	1	12	2.0	0.10	0.35	0.40	22.3	3.6	43	15	50	40	5	0	M	0.30	R	L	23						0	0	0	0	0.0	5	0	0	0	5	0				EB, MC	N
Kobes Creek	K6	3785	G	1	15	1.0	0.25	0.15	0.30	20.7	7.5	113	40	18	40	2	0	H	0.25	R	L	23	0.40	0.12	0.28	R		0	0	0	0	0.0	2	2	0	0	4	0				EB, MC	N
Kobes Creek	K6	3800	P	1	43	0.0	0.46	0.30	0.30	22.0	11.0	473	50	25	20	5	0	H	0.25	R	L	124	0.70	0.12	0.58	W		18	11	3	3	11.5	5	0	0	0	17	0				MC, EB, SC, PD	N
Kobes Creek	K6	3843	R	1	38	1.0	0.12	0.30	0.30	12.0	6.5	247	15	50	30	5	0	M	0.40	R	L	128						0	0	0	0	0.0	5	0	0	0	5	2				EB	N
Kobes Creek	K6	3881	P	1	26	0.0	0.63	0.70	0.40	16.7	7.7	200	20	40	45	15	0	H	0.25	R	L	85	0.85	0.06	0.79	R		13	8	3	2	15.0	15	0	0	0	30	2				JM, EB	N
Kobes Creek	K6	3907	R	1	27	2.0	0.06	0.35	0.30	19.0	14.2	383	15	40	30	15	0	M	0.40	R	L	160						0	0	0	0	0.0	15	0	0	0	15	0				EB, MC	N
Kobes Creek	K6	3934	G	1	46	1.0	0.30	0.40	0.40	15.0	5.3	244	20	30	40	10	0	H	0.30	R	L	79	0.40	0.09	0.31	R		0	0	0	0	0.0	10	0	0	0	10	5				EB	N
Kobes Creek	K6	3980	P	1	28	0.0	0.66	0.35	0.40	12.0	7.1	199	20	20	45	15	0	M	0.40	R	L	45	0.85	0.09	0.76	R		4	3	1	0	2.0	15	5	0	0	22	0				EB	N
Kobes Creek	K6	4008	R	1	45	1.5	0.09	0.40	0.50	8.8	5.0	225	10	25	45	20	0	M	0.65	R	L	62						3	0	0	0	0.0	20	0	0	0	20	0				EB, PD	N
Kobes Creek	K6	4053	P	1	27	0.0	0.36	0.30	0.50	11.0	7.4	200	20	25	35	20	0	H	0.50	R	L	54	0.75	0.10	0.65	W		7	4	0	0	3.0	20	5	0	0	28	2				EB, PD	N
Kobes Creek	K6	4080	R	1	30	1.5	0.10	0.20	0.45	13.0	6.8	204	10	30	65	5	0	M	0.30	R	L	69						19	10	7	3	27.4	5	0	0	0	32	0				SC, MB, EB	N
Kobes Creek	K6	4110	G	1	32	0.5	0.30	0.45	0.35	13.8	5.7	181	10	20	65	5	0	H	0.30	R	L	43	0.45	0.10	0.35	R		1	0	0	0	0.0	5	0	0	0	5	2				EB	N
Kobes Creek	K6	4142	R	1	25	1.0	0.10	0.45	0.35	15.3	11.3	283	5	50	40	5	0	H	0.25	R	L	148						0	0	0	0	0.0	5	0	0	0	5	0				MB, EB	N
Kobes Creek	K6	4167	P	1	31	0.0	0.71	0.30	0.50	7.0	6.4	198	30	20	45	5	0	H	0.20	R	L	45	1.20	0.14	1.06	R		2	0	1	0	0.5	5	9	0	0	15	0				EB, PD	N
Kobes Creek	K6	4198	G	1	21	1.0	0.14	0.55	0.45	11.4	4.8	101	15	15	65	5	0	M	0.50	R	L	19	0.40	0.18	0.22	R		0	0	0	0	0.0	5	0	0	0	5	0				EB	N
Kobes Creek	K6	4219	P	1	19	0.0	0.52	0.30	0.40	9.5	6.4	122	30	15	40	15	0	M	0.50	R	L	21	0.70	0.09	0.61	R	Y	2	0	0	0	0.0	15	5	0	0	20	40				EB, PD	N
Kobes Creek	K6	4238	G	1	19	0.5	0.22	0.45	0.40	9.9	4.2	80	60	15	20	5	0	H	0.35	R	L	13	0.50	0.09	0.41	R		1	1	0	0	0.9	5	2	0	0	8	0				EB	N
Kobes Creek	K6	4257	R	1	28	2.0	0.09	0.30	0.30	16.9	6.3	176	10	20	60	10	0	L	0.40	R	L	42						2	0	0	0	0.0	10	0	0	0	10	0				EB, PD	N
Kobes Creek	K6	4285	P	1	40	0.0	0.83	0.50	0.40	10.3	7.1	284	20	50	25	5	0	M	0.30	R	L	146	1.25	0.06	1.19	R		1	0	0	1	1.8	5	2	9	0	18	2				EB	N
Kobes Creek	K6	4325	R	1	32	3.0	0.06	0.40	0.70	20.0	19.0	608	10	45	40	5	0	M	0.30	R	L	288						2	0	0	0	0.0	5	0	0	0	5	2				EB, MB, MC, PD	N
Kobes Creek	K6	4357	P	1	104	0.0	0.48	0.25	0.25	11.4	7.8	811	30	15	50	5	0	M	0.30	R	L	146	0.90	0.11	0.79	BD		21	13	7	1	6.3	5	5	0	0	16	0				EB, JM	N
Kobes Creek	K6	4461	R	1	39	1.5	0.11	0.30	0.20	14.6	9.3	363	20	25	40	15	0	L	0.60	R	L	99						0	0	0	0	0.0	15	0	0	0	15	2				EB	N
Kobes Creek	K6	4500	G	1	34	0.5	0.29	0.40	0.50	11.2	7.1	241	20	30	40	10	0	M	0.60	R	L	78	0.50	0.11	0.39	R		3	0	1	0	0.6	10	0	0	0	11	5				EB, PD	N
Kobes Creek	K6	4534	R	1	27	3.5	0.11	0.40	0.30	13.3	8.3	224	20	25	35	20	0	M	0.40	R	L	61						0	0	0	0	0.0	20	0	0	0	20	2				EB	N
Kobes Creek	K6	4561	P	1	32	0.0	0.46	0.30	0.30	12.9	6.9	221	20	30	45	5	0	M	0.35	R	L	72	1.10	0.12	0.98	R		18	10	6	2	16.2	5	0	5	0	26	0				EB	N
Kobes Creek	K6	4593	R	1	12	3.5	0.12	0.25	0.40	17.5	5.1	61	5	35	55	5	0	M	0.35	R	M	23						0	0	0	0	0.0	5	0	0	0	5	0					N
Kobes Creek	K6	4605	G	1	20	1.0	0.17	0.45	0.30	13.0	3.8	76	10	35	50	5	0	L	0.40	R	L	29	0.40	0.26	0.14	R		0	0	0	0	0.0	5	0	0	0	5	0				EB	N
Kobes Creek	K6	4625	P	1	38	0.0	0.60	0.40	0.45	8.9	7.2	274	30	15	50	5	0	M	0.40	R	L	49	0.85	0.10	0.75	R		25	16	5	4	18.3	5	10	0	0	33	0					N
Kobes Creek	K6	4663	G	1	40	1.0	0.26	0.50	0.30	10.5	5.0	200	25	25	40	10		H	0.35	R	L	55	0.45	0.11	0.34	R		4	0	0	0	0.0	10	0	0	0	10	5				EB, PD	N
Kobes Creek	K6	4703	R	1	14	3.0	0.10	0.40	0.30	15.0	6.3	88	5	33	60	10	0	L	0.40	R	M	32						0	0	0	0	0.0	10	0	0	0	10	0					N
Kobes Creek	K6	4717	P	1	68	0.0	0.44	0.30	0.30	10.8	9.5	646	50	10	30	10	0	M	0.35	R	L	76	1.25	0.13	1.12	R		5	4	1	0	1.2	10	0	5	0	16	10					N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally										Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	K6	4785	G	1	20	1.0	0.21	0.40	0.40	7.6	5.6	112	10	35	45	10	0	M	0.35	R	L	42	0.27	0.13	0.14	R		0	0	0	0	0.0	10	0	0	0	10	0				EB	N
Kobes Creek	K6	4805	R	1	21	1.5	0.13	0.25	0.40	11.0	7.7	162	10	25	50	15	0	M	0.50	R	L	45						1	1	0	0	0.2	15	2	0	0	17	0				EB,PD	N
Kobes Creek	K6	4826	P	1	57	0.0	0.27	0.30	0.20	9.0	6.4	365	30	40	25	5	0	M	0.20	R	L	151	0.70	0.07	0.63	R		4	3	1	0	1.6	5	5	0	0	12	5				EB	N
Kobes Creek	K6	4883	R	1	4	1.5	0.07	0.35	0.25	12.3	9.3	37	5	38	55	2	0	M	0.25	R	M	15						0	0	0	0	0.0	2	0	0	0	2	0				EB	N
Kobes Creek	K6	4887	P	1	48	0.0	0.38	0.20	0.25	11.0	7.1	341	25	40	30	5	0	M	0.25	R	M	142	0.65	0.09	0.56	W		7	3	0	1	1.9	5	0	0	0	7	2				PD	N
Kobes Creek	K6	4935	R	1	65	1.5	0.09	0.35	0.30	12.7	12.3	800	30	20	35	15	0	M	0.25	R	M	177						0	0	0	0	0.0	15	2	0	0	17	5				MB	N
Kobes Creek	K6	5000	P	1	20	0.0	0.31	0.35	0.55	12.3	11.7	234	50	30	15	5	0	L	0.15	R	L	72	0.45	0.24	0.21	R		3	1	0	0	0.5	5	0	0	0	6	5					N
Kobes Creek	K6	5020	G	1	30	1.0	0.24	0.30	0.60	12.3	8.1	243	15	30	40	15	0	M	0.35	R	L	79	0.35	0.09	0.26	R		1	0	0	0	0.0	15	0	0	0	15	2					N
Kobes Creek	T10-1-1	0	R	1	9	2.5	0.09	0.80	2.00	5.6	3.4	31	5	80	15	0	0	M	0.20	R	M	25						0	0	0	0	0.0	0	0	0	0	0	5					N
Kobes Creek	T10-1-1	9	G	1	12	0.5	0.11	2.50	1.00	4.8	3.4	40	5	80	15	0	0	M	0.20	R	M	33	0.60	0.06	0.54	R		3	1	2	0	19.7	0	5	0	0	25	10					N
Kobes Creek	T10-1-1	21	P	1	10	1.0	0.36	1.00	1.00	5.0	2.0	20	0	60	40	0	0	M	0.23	R	M	12	0.60	0.06	0.54	R		0	0	0	0	0.0	0	5	0	0	5	5					N
Kobes Creek	T10-1-1	31	R	1	8	3.0	0.06	0.75	0.80	5.7	3.4	27	0	50	50	0	0	M	0.23	R	M	14						0	0	0	0	0.0	0	2	0	0	2	2					N
Kobes Creek	T10-1-1	39	P	1	15	0.5	0.44	0.60	1.50	5.8	3.5	53	0	50	50	0	0	M	0.23	R	M	28	0.70	0.05	0.65	R		0	0	0	0	0.0	0	2	0	0	2	5					N
Kobes Creek	T10-1-1	54	R	1	2	3.0	0.05	1.20	1.50	7.0	6.5	13	0	70	30	0	0	M	0.24	R	M	9						0	0	0	0	0.0	0	2	0	0	2	5					N
Kobes Creek	T10-1-1	56	P	1	26	0.5	0.28	0.50	1.10	3.8	3.5	90	50	50	0	0	0	L	0.05	R	L	45	0.75	0.10	0.65	R		1	1	0	0	0.7	0	5	0	0	6	10	SC	G	15		N
Kobes Creek	T10-1-1	82	G	1	22	2.0	0.10	0.45	1.10	5.0	3.9	86	0	30	70	0	0	M	0.24	R	M	29	0.38	0.10	0.28	R		0	0	0	0	0.0	0	5	0	0	5	5	SC	N		MB	N
Kobes Creek	T10-1-1	104	P	1	10	0.5	0.43	0.40	0.40	6.7	6.0	60	50	30	20	0	0	L	0.20	R	L	19	0.67	0.08	0.59	R	Y	18	9	5	4	61.5	0	2	0	0	64	2				JM	N
Kobes Creek	T10-1-1	114	R	1	16	3.5	0.08	0.40	0.40	6.7	6.0	95	5	35	60	0	0	L	0.25	R	M	37						0	0	0	0	0.0	0	0	0	0	0	0					N
Kobes Creek	T10-1-1	130	G	1	18	1.0	0.37	0.15	0.25	4.1	2.5	44	30	50	15	5	0	M	0.25	R	L	22	0.65	0.13	0.52	R		0	0	0	0	0.0	5	0	0	0	5	0				MB	N
Kobes Creek	T10-1-1	148	P	1	15	0.0	0.52	0.35	0.20	7.5	5.4	81	80	10	10	0	0	L	0.06	R	L	9	0.85	0.13	0.72	R		6	4	2	0	7.2	0	0	0	0	7	0					N
Kobes Creek	T10-1-1	163	R	1	10	1.5	0.13	0.20	0.25	5.2	4.0	40	30	50	20	0	0	M	0.22	R	M	20						2	2	0	0	5.3	0	0	0	0	5	0					N
Kobes Creek	T10-1-1	173	G	1	12	1.0	0.19	0.25	0.25	4.9	2.8	34	40	30	30	0	0	M	0.24	R	L	11	0.53	0.06	0.47	R		0	0	0	0	0.0	0	10	0	0	10	2					N
Kobes Creek	T10-1-1	185	R	1	2	1.5	0.06	0.20	0.20	5.5	5.0	10	20	75	5	0	0	L	0.20	R	M	8						0	0	0	0	0.0	0	0	0	0	0	0					N
Kobes Creek	T10-1-1	187	G	1	21	1.0	0.30	0.45	0.30	5.5	3.6	76	45	30	20	5	0	L	0.20	R	H	24	0.50	0.09	0.41	R		4	3	1	0	4.0	5	10	0		19	5					N
Kobes Creek	T10-1-1	251	P	1	64	0.0	0.48	0.35	0.40	7.0	2.9	186	40	50	10	0	0	M	0.25	R	M	94	0.72	0.09	0.63	R		6	2	4	0	7.3	0	5	0	0	12	5					N
Kobes Creek	T10-1-1	271	G	1	20	1.0	0.23	0.40	0.65	5.9	3.6	72	30	65	5	0	0	L	0.05	R	M	47	0.23	0.09	0.14	R		0	0	0	0	0.0	0	2	0	0	2	2					N
Kobes Creek	T10-1-1	300	R	1	29	1.5	0.09	0.40	0.55	6.8	4.8	138	15	75	10	0	0	L	0.06	R	M	104						0	0	0	0	0.0	0	0	0	0	0	0	SC	G	14	MB	N
Kobes Creek	T10-1-1	314	G	1	14	0.5	0.37	0.30	0.30	4.7	2.6	36	10	70	20	0	0	M	0.12	R	M	26	0.37	0.12	0.25	R		17	8	8	1	65.2	0	2	0	0	67	5	SC	G	7	MB, EB, BC	N
Kobes Creek	T10-1-1	321	R	1	7	1.0	0.12	0.30	0.60	5.5	3.7	26	10	55	35	0	0	M	0.15	R	M	15						1	1	0	0	1.2	0	2	0	0	3	5	SC	G	6	MB, MC	N
Kobes Creek	T10-1-1	337	P	1	16	0.0	0.55	0.35	0.45	5.4	2.4	38	50	20	30	0	0	L	0.00	R	L	8	0.75	0.10	0.65	R		1	0	1	0	1.9	0	2	0	0	4	5					N
Kobes Creek	T10-1-1	375	G	1	38	0.5	0.40	0.27	0.20	4.8	1.8	67	15	55	35	0	0	M	0.25	R	L	38	0.65	0.10	0.55	R		0	0	0	0	0.0	0	10	0	0	10	5				MC, EB	N
Kobes Creek	T10-1-1	380	R	1	5	1.5	0.07	0.30	0.20	5.3	3.3	17	70	10	20	0	0	L	0.20	R	L	2						0	0	0	0	0.0	0	0	0	0	0	5				WG, MB, MC	N
Kobes Creek	T10-1-1	400	G	1	20	0.5	0.21	0.30	0.20	6.8	2.5	49	35	30	35	0	0	L	0.25	R	L	16	0.35	0.10	0.25	R		2	2	0	0	3.7	0	0	0	0	4	5	SC	G	10		N
Kobes Creek	T10-1-1	410	R	1	10	2.0	0.10	0.25	0.25	4.9	3.4	34	30	40	30	0	0	L	0.20	R	L	14						2	2	0	0	7.2	0	0	0	0	7	0	SC	P	32	MB, MC	N
Kobes Creek	T10-1-1	442	G	1	32	0.5	0.15	0.45	0.30	4.6	4.6	147	25	60	15	0	0	M	0.15	R	L	90	1.00	0.10	0.90	R		2	2	0	0	1.6	0	0	2	0	4	0				EB	N
Kobes Creek	T10-1-1	458	R	1	16	1.5	0.10	0.15	0.40	7.3	3.6	58	20	60	20	0	0	M	0.25	R	L	35						0	0	0	0	0.0	0	5	0	2	7	15				MB	N
Kobes Creek	T10-1-1	473	P	1	15	0.0	0.56	0.20	0.25	5.8	4.9	74	50	50	0	0	0	L	0.05	R	L	37	0.65	0.11	0.54	R		2	2	0	0	2.9	0	5	0	0	8	30					N
Kobes Creek	T10-1-1	479	R	1	6	1.5	0.11	0.30	0.40	5.3	4.8	29	10	30	60	0	0	L	0.24	R	M	10						0	0	0	0	0.0	0	5	0	0	5	2					N
Kobes Creek	T10-1-1	498	P	1	19	0.5	0.78	0.20	0.25	5.1	3.6	68	28	50	20	2	0	L	0.24	R	L	35	1.00	0.11	0.89	R		2	1	1	0	3.7	2	0	5	0	11	2					N
Kobes Creek	T10-1-1	515	R	1	17	1.5	0.13	0.30	0.20	4.8	3.7	63	10	20	60	10	0	M	0.24	R	L	15						0	0	0	0	0.0	10	2	0	0	12	0					N
Kobes Creek	T10-1-1	524	P	1	9	0.0	0.35	0.35	0.40	5.4	3.6	32	20	40	40	0	0	L	0.24	R	L	14	0.80	0.14	0.66	R		0	0	0	0	0.0	0	15			15	5					N
Kobes Creek	T10-1-1	565	R	1	41	1.5	0.14	0.37	0.20	6.1	4.2	170	10	30	50	10	0	M	0.25	R	M	56						0	0	0	0	0.0	10	5	0	0	15	5					N
Kobes Creek	T10-1-1	571	P	1	6	0.0	0.39	0.20	0.40	6.6	4.4	26	10	30	50	10	0	M	0.25	R	M	5	0.55	0.10	0.45	R	Y	9	5	4	0	48.9	5	5	0	0	59	0					N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	T10-1-1	596	R	1	25	2.0	0.11	0.30	0.30	5.8	3.3	83	20	15	60	5	0	M	0.24	R	L	50						1	1	0	0	0.9	0	0	0		1	2					N
Kobes Creek	T10-1-1	606	P	1	10	0.0	0.57	0.25	0.30	5.4	3.6	36	30	60	10	0	0	M	0.24	R	L	8	0.70	0.16	0.54	R		2	2	0	0	16.7	0	0	0	0	17	0					N
Kobes Creek	T10-1-1	616	R	1	10	1.0	0.16	0.23	0.23	7.2	2.1	21	20	20	50	10	0	L	0.30	R	L	10						0	0	0	0	0.0	10	0	0	0	10	0					N
Kobes Creek	T10-1-1	624	P	1	8	0.0	0.45	0.35	0.25	4.5	3.5	28	40	50	10	0	0	L	0.24	R	L	11	0.60	0.14	0.46	R		1	0	0	0	0.0	0	0	0	0	0	0				MB	N
Kobes Creek	T10-1-1	630	R	1	6	1.5	0.14	0.25	0.25	9.7	7.0	42	5	35	60	0	0	L	0.20	R	M	11						0	0	0	0	0.0	0	0	0	0	0	5				MB, EB	N
Kobes Creek	T10-1-1	640	P	1	10	0.0	0.55	0.25	0.25	5.5	4.5	45	50	25	25	0	0	M	0.20	R	L	11	0.70	0.14	0.56	R		1	0	0	1	5.1	0	0	0	0	5	2				MB	N
Kobes Creek	T10-1-1	652	R	1	12	1.5	0.14	0.25	0.25	5.1	4.8	57	10	20	70	0	0	M	0.24	R	M	14						0	0	0	0	0.0	0	5	0	0	5	20				MB	N
Kobes Creek	T10-1-1	657	P	1	5	0.0	0.50	0.35	0.25	4.8	3.5	17	10	20	70	0	0	M	0.24	R	M	11	0.65	0.20	0.45	R		7	0	1	0	12.2	0	15	0	0	27	10				EB	N
Kobes Creek	T10-1-1	661	R	1	7	1.5	0.20	0.30	0.50	6.0	3.1	21	20	60	20	0	0	M	0.20	R	L	4						2	0	0	0	0.0	0	0	0	0	0	0				MB	N
Kobes Creek	T10-1-1	668	P	1	40	0.0	0.32	0.65	0.50	8.1	8.0	320	70	20	10	0	0	M	0.24	R	L	162	0.74	0.11	0.63	R		2	0	0	2	3.8	0	10	0	0	14	5				WG	N
Kobes Creek	T10-1-1	708	G	1	5	1.0	0.16	0.45	0.30	4.6	3.3	17	40	50	10	0	0	L	0.24	R	L	6	0.60	0.11	0.49	R	Y	9	5	4	0	65.2	0	10	0	0	75	10				WG, MB, JM	N
Kobes Creek	T10-1-1	713	R	1	3	1.5	0.11	0.30	0.20	6.0	2.8	8	15	35	50	0	0	L	0.20	R	L	4						0	0	0	0	0.0	0	0	0	0	0	5				MB	N
Kobes Creek	T10-1-1	716	P	1	24	0.0	0.42	0.45	0.50	9.4	5.7	137	45	45	10	0	0	L	0.20	R	L	52	0.51	0.12	0.39	R	Y	12	5	6	1	13.2	0	2	0	0	15	50				WG, MB, JM	N
Kobes Creek	T10-1-1	740	R	1	30	1.5	0.12	0.20	0.25	7.9	2.5	74	15	35	50	0	0	M	0.20	R	M	26						18	9	5	4	51.5	0	5	0	0	56	20				WG	N
Kobes Creek	T10-1-1	770	P	1	13	0.0	0.64	0.15	0.30	5.7	4.0	52	60	35	5	0	0	L	0.10	R	L	21	0.82	0.07	0.75	R		0	0	0	0	0.0	0	30	0	0	30	0					N
Kobes Creek	T10-1-1	783	G	1	33	1.0	0.26	0.30	0.25	7.8	3.7	120	50	40	10	0	0	L	0.15	R	L	63	0.82	0.07	0.75	R		1	0	1	0	0.9	0	10	0	0	11	15				WG, EB	N
Kobes Creek	T10-1-1	816	R	1	14	1.5	0.07	0.40	0.45	5.6	5.5	77	15	50	35	0	0	L	0.15	R	M	24						4	0	0	0	0.0	0	10	0	0	10	15				MB, PD	N
Kobes Creek	T10-1-1	830	P	1	60	0.0	0.32	0.65	0.40	6.0	3.4	201	50	30	20	0	0	M	0.20	R	L	105	0.65	0.13	0.52	R		5	0	0	0	0.0	0	20	0	0	20	5				EB, PD	N
Kobes Creek	T10-1-1	890	G	1	5	1.0	0.17	0.30	0.55	6.5	2.6	13	15	50	35	0	0	L	0.12	R	M	7	0.50	0.13	0.37	R		5	0	0	0	0.0	0	20	0	0	20	10				WG, MB, EB, PD	N
Kobes Creek	T10-1-1	895	R	1	6	2.0	0.13	0.35	0.35	8.8	1.8	11	15	50	35	0	0	L	0.15	R	M	7						1	0	0	0	0.0	0	0	0	0	0	0				MB, EB, PD	N
Kobes Creek	T10-1-1	901	P	1	33	0.0	0.47	0.45	0.25	5.9	3.8	125	25	60	15	0	0	L	0.10	R	L	77	0.85	0.09	0.76	R		1	0	1	0	0.6	0	0	0	0	1	25				MB, EB	N
Kobes Creek	T10-1-1	934	G	1	7	1.0	0.15	0.15	0.25	4.6	2.6	18	15	60	25	0	0	L	0.15	R	M	7	0.30	0.09	0.21	R		4	0	4	0	39.2	0	0	0	0	39	0				MB, MC, EB	N
Kobes Creek	T10-1-1	941	R	1	11	2.0	0.09	0.15	0.20	3.7	3.2	35	20	35	45	0	0	L	0.20	R	L	8						0	0	0	0	0.0	0	0	0	0	0	0				EB	N
Kobes Creek	T10-1-1	952	G	1	8	1.0	0.29	0.30	0.30	4.9	2.9	23	30	20	50	0	0	M	0.15	R	L	8	0.55	0.07	0.48	R		0	0	0	0	0.0	0	2	0	0	2	30					N
Kobes Creek	T10-1-1	960	R	1	6	1.5	0.07	0.35	0.35	3.7	3.6	22	10	30	60	0	0	L	0.00	R	M	8						1	1	0	0	2.8	0	30	0	0	33	10				EB, MB	N
Kobes Creek	T10-1-1	966	G	1	5	1.0	0.24	0.70	0.50	8.7	3.9	20	35	35	30	0	0	L	0.20	R	L	14	0.50	0.06	0.44	R		2	1	0	0	3.1	0	10	0	0	13	2				EB, MC	N
Kobes Creek	T10-1-1	971	R	1	9	1.5	0.06	0.20	0.40	5.7	5.3	48	5	70	25	0	0	M	0.20	R	M	17						0	0	0	0	0.0	0	5	0	0	5	0				EB, MC	N
Kobes Creek	T10-1-1	980	P	1	45	0.0	0.52	0.55	0.55	5.0	4.1	182	60	35	5	0	0	L	0.10	R	L	84	1.05	0.07	0.98	R		5	0	1	0	1.0	0	20	15	0	36	0				EB, MC	N
Kobes Creek	T10-1-1	1025	G	1	5	1.0	0.13	0.25	0.25	6.5	3.3	16	25	45	20	10	0	M	0.40	R	L	7	0.60	0.07	0.53	R	Y	10	4	3	3	41.5	10	10	0	0	62	50				WG, JM, MC, EB	N
Kobes Creek	T10-1-1	1030	P	1	34	0.0	0.69	0.45	0.45	6.1	4.2	143	50	40	10	0	0	M	0.10	R	L	61	0.83	0.07	0.76	R		3	1	2	0	3.6	0	0	0	0	4	5				EB	N
Kobes Creek	T10-1-1	1064	R	1	16	1.5	0.07	0.50	0.50	5.9	4.1	66	20	40	40	0	0	M	0.20	R	L	14						3	0	0	0	0.0	0	5	0	0	5	20				MB, MC, EB, PD	N
Kobes Creek	T10-1-1	1080	P	1	29	0.0	0.60	0.50	0.30	8.5	8.0	232	70	20	10	0	0	L	0.10	R	L	120	0.80	0.08	0.72	W	Y	11	6	4	1	9.2	0	20	0	0	29	40				EB, JM	N
Kobes Creek	T10-1-1	1109	R	1	66	1.5	0.08	0.20	0.20	7.0	5.3	350	20	50	30	0	0	M	0.15	R	L	132						0	0	0	0	0.0	0	2	0	0	2	15				WG, MC	N
Kobes Creek	T10-1-1	1175	G	1	32	1.0	0.16	0.35	0.40	4.7	3.0	96	20	35	45	0	0	L	0.20	R	L	26	0.20	0.12	0.08	R		0	0	0	0	0.0	0	2	0	0	2	0				WG, MC, MB, EB	N
Kobes Creek	T10-1-1	1207	R	1	7	1.5	0.12	0.35	0.65	9.6	3.0	21	35	25	40	0	0	L	0.25	R	L	2						0	0	0	0	0.0	0	0	0	0	0	2				EB	N
Kobes Creek	T10-1-1	1214	P	1	11	0.0	0.42	0.50	0.40	6.1	3.6	40	60	10	30	0	0	L	0.20	R	L	5	0.54	0.12	0.42	R		4	3	0	0	6.8	0	10	0	0	17	25				EB, MB	N
Kobes Creek	T10-1-1	1225	R	1	16	1.5	0.12	0.40	0.30	9.3	2.8	45	60	10	30	0	0	L	0.20	R	L	5						0	0	0	0	0.0	0	0	0	0	0	2				EB, MB, MC	N
Kobes Creek	T10-1-1	1241	P	1	26	0.0	0.40	0.30	0.30	7.3	3.4	88	60	10	30	0	0	L	0.20	R	L	24	1.20	0.06	1.14	R		0	0	0	0	0.0	0	0	5	0	5	15				EB	N
Kobes Creek	T10-1-1	1267	G	1	3	1.0	0.20	0.50	0.35	4.8	3.0	9	40	25	35	0	0	L	0.25	R	L	5	0.60	0.06	0.54	R	Y	3	0	3	0	35.6	0	15	0	0	51	35				EB	N
Kobes Creek	T10-1-1	1270	R	1	13	2.0	0.06	0.30	0.35	7.0	4.0	52	5	50	45	0	0	L	0.15	R	M	6						0	0	0	0	0.0	0	0	0	0	0	0				EB, MB, MC	N
Kobes Creek	T10-1-1	1283	P	1	14	0.0	0.52	0.25	0.25	5.4	2.5	35	65	10	25	0	0	L	0.15	R	L	22	0.95	0.08	0.87	R	Y	2	1	1	0	5.7	0	0	0	0	6	40				EB	N
Kobes Creek	T10-1-1	1297	R	1	16	1.5	0.08	0.25	0.30	5.4	3.8	60	15	60	25	0	0	M	0.15	R	L	25						0	0	0	0	0.0	0	0	0	0	0	5				EB	N
Kobes Creek	T10-1-1	1313	G	1	21	1.0	0.14	0.40	0.35	5.8	4.0	83	40	40	20	0	0	M	0.20	R	L	40	0.42	0.05	0.37	R		2	0	0	0	0.0	0	0	0	0	0	5					N
Kobes Creek	T10-1-1	1334	R	1	13	1.5	0.05	0.20	0.15	7.5	7.0	90	10	45	45	0	0	M	0.20	R	L	55						0	0	0	0	0.0	0	2	0	0	2	0				EB, MB, MC	N
Kobes Creek	T10-1-1	1347	P	1	24	0.0	0.57	0.15	0.20	4.5	3.4	80	25	60	15	0	0	L	0.20	R	M	31	0.80	0.06	0.74	R		0	0	0	0	0.0	0	5	0	0	5	2					N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel				Pools Only					Functional LWD tally									Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	T10-1-1	1371	R	1	9	1.5	0.06	0.45	0.30	4.8	3.6	32	10	35	50	5	0	M	0.25	R	L	13						0	0	0	0	0.0	5	0	0	0	5	5				MC	N
Kobes Creek	T10-1-1	1380	G	1	44	1.0	0.32	0.25	0.25	6.2	3.9	172	45	40	10	0	0	L	0.15	R	L	33	0.50	0.15	0.35	R		3	3	2	1	5.6	0				6					N
Kobes Creek	T10-1-1	1424	R	1	9	2.0	0.15	0.25	0.20	5.6	3.5	31	5	15	70	10	0	L	0.40	R	L	16						1	0	0	0	0.0	10	0	0	0	10	50				MB, EB, PD,	N
Kobes Creek	T10-1-1	1433	G	1	9	1.0	0.18	0.20	0.25	5.5	4.0	36	35	50	15	0	0	L	0.15	R	L	18	0.34	0.12	0.22	R		2	0	0	0	0.0	0	5	0	0	5	10				EB, PD	N
Kobes Creek	T10-1-1	1442	P	1	16	0.0	0.43	0.30	0.35	4.8	3.0	48	35	50	15	0	0	L	1.15	R	L	9	0.70	0.12	0.58	R		7	0	2	0	5.8	0	0	0	0	6	30				EB, PD	N
Kobes Creek	T10-1-1	1458	R	1	24	2.0	0.12	0.20	0.20	6.9	4.9	118	10	15	60	15	0	M	0.40	R	M	50						0	0	0	0	0.0	15	0	0	2	17	5				MB, EB	N
Kobes Creek	T10-1-1	1482	G	1	5	1.0	0.15	0.25	0.15	4.7	3.3	17	15	40	40	5	0	L	0.30	R	M	5	0.29	0.09	0.20	R		0	0	0	0	0.0	5	5			10					EB	N
Kobes Creek	T10-1-1	1487	R	1	10	1.5	0.09	0.35	0.20	5.2	2.5	25	15	30	45	10	0	M	0.35	R	L	9						0	0	0	0	0.0	10	0	0	2	12	0				EB	N
Kobes Creek	T10-1-1	1497	G	1	51	1.0	0.23	0.35	0.25	4.6	3.6	184	60	35	5	0	0	L	0.08	R	L	86	0.30	0.13	0.17	R		0	0	0	0	0.0	0	5	0	0	5	2				EB	N
Kobes Creek	T10-1-1	1548	R	1	10	1.5	0.13	0.40	0.28	5.6	2.8	28	15	45	35	5	0	M	0.35	R	M	4						1	0	0	0	0.0	5	15	0	0	20	15				PD, MB, MC, EB	N
Kobes Creek	T10-1-1	1558	P	1	28	0.0	0.51	0.40	0.45	6.5	3.9	109	70	15	10	5	0	M	0.10	R	L	57	0.65	0.08	0.57	R	Y	11	7	2	2	12.9	5	5	0	0	23	35				JM, EB	N
Kobes Creek	T10-1-1	1586	R	1	9	2.0	0.08	0.30	0.20	6.7	5.1	45	5	50	35	10	0	H	0.30	R	L	10						0	0	0	0	0.0	10	0	0	0	10	0				EB	N
Kobes Creek	T10-1-1	1595	G	1	27	1.0	0.29	0.25	0.50	6.2	3.7	100	50	20	20	10	0	H	0.30	R	L	42	0.50	0.10	0.40	R		4	0	0	0	0.0	10	10	0	0	20	15				EB, PD	N
Kobes Creek	T10-1-1	1622	R	1	13	1.5	0.10	0.40	0.30	5.8	4.1	53	30	40	30	0	0	H	0.30	R	L	22						1	0	0	0	0.0	0	0	0	0	0	2				EB, PD	N
Kobes Creek	T10-1-1	1635	G	1	8	1.0	0.31	0.25	0.30	4.8	3.0	24	30	40	30	0	0	M	0.20	R	L	6	0.57	0.08	0.49	R		0	0	0	0	0.0	0	10	0	0	10	5				WG, EB,	N
Kobes Creek	T10-1-1	1643	R	1	44	2.0	0.11	0.30	0.25	5.9	3.5	154	15	20	55	10	0	L	0.25	R	L	20						0	0	0	0	0.0	10	0	0	0	10	2				MB, EB	N
Kobes Creek	T10-1-2	0	G	1	13	1.0	0.18	0.25	0.40	6.4	5.4	70	30	10	50	10	0	L	0.30	R	L	36	0.50	0.12	0.38	R		2	2	0	0	1.3	10	10	0	0	21	10				WG, MB, MC, EB	N
Kobes Creek	T10-1-2	13	R	1	8	1.0	0.06	0.20	0.20	8.4	7.1	56	10	50	40	0	0	H	0.24	R	L	30						2	0	0	0	0.0	0	0	0	0	0	0				PD, WG, MB, EB	N
Kobes Creek	T10-1-2	21	P	1	11	0.0	0.57	0.40	0.30	4.4	2.3	25	10	50	40	0	0	H	0.24	R	L	9	0.55	0.08	0.47	R		0	0	0	0	0.0	0	5	0	0	5	25				EB	N
Kobes Creek	T10-1-2	32	R	1	15	1.5	0.08	0.20	0.35	5.3	4.1	62	30	35	25	10	0	H	0.40	R	L	20						0	0	0	0	0.0	10	5	0	0	15	0				EB	N
Kobes Creek	T10-1-2	47	P	1	9	0.0	0.27	0.35	0.35	4.6	3.1	27	30	30	40	0	0	M	0.24	R	L	6	0.55	0.08	0.47	R		0	0	0	0	0.0	0	5	0	0	5	2				MB, MC, EB	N
Kobes Creek	T10-1-2	56	R	1	27	2.0	0.08	0.15	0.20	7.1	5.0	135	10	20	60	10	0	M	0.45	R	L	55						0	0	0	0	0.0	10	5	0	0	15	2				MB, MC, EB	N
Kobes Creek	T10-1-2	83	P	1	28	0.0	0.52	0.20	0.35	5.3	5.2	146	40	40	15	5	0	L	0.15	R	M	47	0.77	0.19	0.58	R		3	0	2	0	2.4	5	5	0	0	12	5				MB, EB	N
Kobes Creek	T10-1-2	111	R	1	18	2.0	0.19	0.25	0.25	4.6	2.8	50	25	30	40	5	0	H	0.35	R	L	21						2	0	0	0	0.0	5	2	0	0	7	2				WG, MB, PD, EB	N
Kobes Creek	T10-1-2	129	G	1	64	1.5	0.31	0.40	0.40	5.0	3.8	240	40	40	15	5	0	H	0.00	R	L	112	0.55	0.10	0.45	R		1	0	1	0	0.6	5	2	0	0	8	5				EB	N
Kobes Creek	T10-1-2	193	R	1	7	1.5	0.10	0.20	0.20	4.8	3.8	26	20	45	30	50	0	0	0.00	R	M	11						1	1	0	0	1.1	50	5	0	0	56	5				EB	N
Kobes Creek	T10-1-2	200	G	1	9	0.5	0.19	0.30	0.25	4.2	3.4	31	40	40	15	5	0	H	0.00	R	L	16	0.55	0.07	0.48	R		0	0	0	0	0.0	5	5	0	0	10	0				EB	N
Kobes Creek	T10-1-2	209	R	1	10	2.5	0.07	0.15	0.15	5.2	4.2	42	10	50	35	5	0	H	0.20	R	L	22						0	0	0	0	0.0	5	2	0	0	7	0				WG, MB, MC, EB	N
Kobes Creek	T10-1-2	219	G	1	22	1.0	0.38	0.20	0.25	5.1	3.1	68	10	50	35	5	0	H	0.20	R	L	25	0.55	0.08	0.47	R		0	0	0	0	0.0	5	5	0	0	10	5				EB	N
Kobes Creek	T10-1-2	241	R	1	17	1.5	0.08	0.15	0.20	5.3	4.4	74	30	35	30	5	0	H	0.20	R	L	16						0	0	0	0	0.0	5	0	0	0	5	0				MB, EB	N
Kobes Creek	T10-1-2	258	P	1	25	0.0	0.38	0.20	0.15	5.6	5.1	126	40	20	20	0	0	M	0.15	R	L	45	0.45	0.07	0.38	R		2	2	0	0	0.2	0	2	0	2	4	5				WG, MB, MC, EB	N
Kobes Creek	T10-1-2	283	R	1	12	2.0	0.07	0.20	0.25	6.3	5.8	70	15	33	50	2	0	H	0.25	R	L	26						0	0	0	0	0.0	2	0	0	2	4	2				WG, MB, EB	N
Kobes Creek	T10-1-2	295	P	1	5	0.0	0.60	0.20	0.30	6.3	4.5	23	35	35	30	0	0	M	0.15	R	L	15	0.95	0.05	0.90	R		0	0	0	0	0.0	0	5	0	0	5	10				EB	N
Kobes Creek	T10-1-2	300	R	1	12	1.5	0.05	0.15	0.20	5.2	5.0	60	15	65	20	0	0	H	0.20	R	L	10						0	0	0	0	0.0	0	0	0	0	0	5				MB, EB	N
Kobes Creek	T10-1-2	312	P	1	22	0.0	0.48	0.30	0.25	4.3	4.3	94	55	15	30	0	0	L	0.20	R	L	44	0.80	0.11	0.69	R		1	0	1	0	0.7	0	10	0	2	13	0				SC,WG, EB	N
Kobes Creek	T10-1-2	334	R	1	16	1.5	0.11	0.30	0.30	5.2	3.6	58	20	45	30	5	0	H	0.24	R	L	18						0	0	0	0	0.0	5	2	0	0	7	2				MC, MB, EB	N
Kobes Creek	T10-1-2	350	P	1	10	0.0	0.38	0.20	0.35	5.4	3.4	34	60	30	8	2	0	L	0.10	R	L	17	0.87	0.09	0.78	R		0	0	0	0	0.0	2	5	0	0	7	5				WG, EB	N
Kobes Creek	T10-1-2	360	R	1	10	1.0	0.09	0.30	0.30	4.1	3.6	36	30	50	18	2	0	H	0.25	R	L	11						0	0	0	0	0.0	2	2	0	0	4	2				EB	N
Kobes Creek	T10-1-2	370	P	1	12	0.0	0.51	0.30	0.30	6.0	3.5	41	40	30	30	0	0	L	0.15	R	L	13	0.62	0.12	0.50	R		0	0	0	0	0.0	0	2	0	0	2	5				MB, EB	N
Kobes Creek	T10-1-2	382	R	1	6	1.5	0.12	0.30	0.35	5.5	2.8	17	35	30	35	0	0	M	0.20	R	L	8						0	0	0	0	0.0	0	2	0	0	2	5				MB, EB	N
Kobes Creek	T10-1-2	388	G	1	34	1.0	0.34	0.35	0.35	6.0	3.6	122	25	45	30	0	0	H	0.15	R	L	46	0.45	0.07	0.38	R		0	0	0	0	0.0	0	5	0	0	5	2				EB	N
Kobes Creek	T10-1-2	422	R	1	9	1.5	0.07	0.80	0.80	6.8	6.4	57	20	35	40	5	0	H	0.25	R	L	24						0	0	0	0	0.0	5	0	0	2	7	45				WG, MB, EB	N
Kobes Creek	T10-1-2	431	G	1	2	1.0	0.19	0.55	0.50	5.5	5.4	11	40	40	20	0	0	M	0.22	R	L	7	0.30	0.07	0.23	R		0	0	0	0	0.0	0	5	0	0	5	2				EB	N
Kobes Creek	T10-1-2	433	R	1	9	1.5	0.07	0.45	0.45	6.0	2.0	18	5	65	30	0	0	L	0.15	R	M	4						0	0	0	0	0.0	0	0	0	0	0	0				MB	N
Kobes Creek	T10-1-2	442	P	1	11	0.0	0.35	0.20	0.25	4.4	3.5	39	30	20	50	0	0	H	0.20	R	L	9	0.67	0.12	0.55	R		0	0	0	0	0.0	0	0	0	0	0	5				WG, EB	N

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

								Bank height (m)		Mean Width (m)				Percent bed material (range in mm)						Spawning gravel			Pools Only					Functional LWD tally								Off-channel habitat				
Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Left	Right	Bankfull	Wetted	Rearing	Habitat Area (m^2) [5]	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Compaction	D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)	Channel Disturbances [12]	Barriers [13]
Kobes Creek	T10-1-2	453	G	1	7	1.0	0.18	0.25	0.25	4.5	3.5	25	30	20	50	0	0	H	1.20	R	L	17	0.32	0.12	0.20	R		12	5	4	3	71.8	0	0	0	0	72	10				JM, EB	N
Kobes Creek	T10-1-2	460	R	1	44	2.5	0.12	0.40	0.35	4.8	2.5	110	10	70	20	0	0	L	0.15	R	M	37						1	0	0	0	0.0	0	0	0	2	2	10				PD, WG, MB, EB	N
Kobes Creek	T10-1-2	504	G	1	8	1.5	0.15	0.20	0.30	3.9	2.1	16	5	30	60	5	0	L	0.25	R	L	5	0.44	0.09	0.35	R		0	0	0	0	0.0	5	2	0	0	7	10				WG, MB, EB	N
Kobes Creek	T10-1-2	512	R	1	29	1.5	0.09	0.15	0.15	6.1	4.9	141	15	25	60	0	0	M	0.20	R	L	58						0	0	0	0	0.0	0	0	0	2	2	5				WG, MB, EB	N
Kobes Creek	T10-1-2	541	G	1	7	1.0	0.13	0.25	0.20	4.0	3.8	26	35	40	20	5	0	M	0.20	R	L	16	0.40	0.15	0.25	R		2	0	0	0	0.0	5	0	0	0	5	10				WG, EB, PD	N
Kobes Creek	T10-1-2	548	R	1	13	1.5	0.07	0.30	0.20	5.9	3.2	42	5	60	35	0	0	L	0.20	R	L	17						0	0	0	0	0.0	0	0	0	0	0	2				WG, MB, MC, EB	N
Kobes Creek	T10-1-2	561	P	1	9	0.0	0.39	0.35	0.30	6.0	2.6	23	30	40	30	0	0	M	0.20	R	L	10	0.71	0.10	0.61	R	Y	0	0	0	0	0.0	0	30	0	0	30	30					N
Kobes Creek	T10-1-2	570	R	1	40	2.0	0.10	0.20	0.30	7.6	5.4	214	8	40	50	2	0	L	0.25	R	M	78						0	0	0	0	0.0	2	0	0	2	4	5	PD	P	13	WG, MB, MC, EB	N
Kobes Creek	T10-1-2	610	G	1	13	1.5	0.15	0.35	0.40	3.4	3.1	40	40	35	25	0	0	H	0.20	R	L	19	0.45	0.09	0.36	R		1	1	0	0	1.5	0	2	0	2	6	5				WG, MB, EB	N
Kobes Creek	T10-1-2	623	R	1	25	3.0	0.09	0.40	0.50	9.0	4.0	100	25	45	30	0	0	L	0.20	R	L	16						0	0	0	0	0.0	5	0	0	0	5	5				MB, EB	N
Kobes Creek	T10-1-2	648	P	1	18	0.0	0.56	0.35	0.40	5.0	4.2	76	60	15	20	5	0	M	0.22	R	L	51	0.90	0.12	0.78	R		0	0	0	0	0.0	5	0	0	0	5	5				WG, MB, EB	N
Kobes Creek	T10-1-2	666	R	1	13	2.0	0.12	0.35	0.40	5.4	2.6	33	5	65	30	0	0	L	0.15	R	L	22						0	0	0	0	0.0	0	0	0	2	2	2				WG, MB, EB	N
Kobes Creek	T10-1-2	679	G	1	10	1.5	0.15	0.40	0.40	5.1	3.9	39	5	65	30	0	0	L	0.20	R	L	7	0.30	0.11	0.19	R		0	0	0	0	0.0	0	2	0	2	4	50				WG, MB, EB	N
Kobes Creek	T10-1-2	689	P	1	9	0.0	0.29	0.25	0.25	3.2	2.8	25	50	15	35	0	0	L	0.20	R	L	12	0.50	0.10	0.40	R		0	0	0	0	0.0	0	5	0	0	5	30				EB	N
Kobes Creek	T10-1-2	698	R	1	5	3.5	0.11	0.75	0.85	5.2	3.3	16	5	45	50	0	0	M	0.20	R	L	5						0	0	0	0	0.0	0	5	0	0	5	0				EB	N
Kobes Creek	T10-1-2	703	P	1	9	0.0	0.40	0.85	0.85	5.2	3.9	35	20	30	50	0	0	L	0.25	R	L	9	0.50	0.08	0.42	R		2	0	1	0	2.0	0	0	0	0	2	25				EB, PD	N
Kobes Creek	T10-1-2	712	G	1	13	1.5	0.25	0.30	0.50	4.9	1.8	23	60	25	15	0	0	H	0.25	R	L	6	0.35	0.08	0.27	R		0	0	0	0	0.0	0	10	0	0	10	25				EB	N
Kobes Creek	T10-1-2	725	P	1	12	0.0	0.61	0.55	0.50	5.3	4.1	49	60	25	15	0	0	H	0.25	R	L	23	0.79	0.08	0.71	R		1	0	1	0	2.9	0	0	0	0	3	2				EB	N
Kobes Creek	T10-1-2	737	R	1	11	3.0	0.08	0.60	0.85	6.9	4.7	51	10	45	45	0	0	H	0.20	R	L	17						0	0	0	0	0.0	0	0	0	0	0	2				MB, EB	N
Kobes Creek	T10-1-2	748	G	1	12	1.0	0.14	0.5	0.4	5.5	5.2	62	10	30	60	0	0	M	0.20	R	L	14	0.52	0.05	0.47	R		0	0	0	0	0.0	0	5	0	0	5	2					N
Kobes Creek	T10-1-2	760	P	1	25	0.0	0.39	0.2	0.5	5.1	3.3	83	60	20	30	0	0	L	0.20	R	L	31	0.65	0.05	0.60	R		0	0	0	0	0.0	0	15	0	0	15	2				EB	N
Kobes Creek	T10-1-2	785	G	1	7	1.5	0.23	0.4	0.4	5.1	3.4	23	30	35	35	0	0	M	0.20	R	L	8	0.42	0.05	0.37	R		2	0	0	0	0.0	0	5	0	0	5	5				EB, PD	N
Kobes Creek	T10-1-2	792	R	1	15	2.0	0.05	0.6	0.5	7.1	5.9	89	10	30	60	0	0	M	0.20	R	L	32						3	0	0	0	0.0	0	2	0	0	2	2				EB, MB, PD	N
Kobes Creek	T10-1-2	807	P	1	5	0.0	0.25	0.3	0.3	7.5	4.1	20	45	35	20	0	0	H	0.20	R	L	13	0.56	0.08	0.48	R		0	0	0	0	0.0	0	2	0	0	2	5				EB	N
Kobes Creek	T10-1-2	812	R	1	13	1.0	0.08	0.2	0.3	6.9	6.2	80	5	60	35	0	0	L	0.20	R	M	24						0	0	0	0	0.0	0	0	0	0	0	0					N
Kobes Creek	T10-1-2	825	P	1	30	0.0	0.37	0.6	0.3	7.0	4.4	131	65	30	5	0	0	L	0.09	R	L	68	0.75	0.14	0.61	R		0	0	0	0	0.0	0	5	0	0	5	25	SC	N	30	SC, EB	N
Kobes Creek	T10-1-2	855	R	1	15	2.0	0.14	0.3	0.3	2.7	1.7	25	10	50	40	0	0	M	0.20	R	M	10						0	0	0	0	0.0	0	2	0	0	2	15	SC	P	15	WG, MB, MC, EB	N
Kobes Creek	T10-1-2	870	G	1	17	1.0	0.25	0.5	0.4	2.8	2.7	46	45	40	15	0	0	L	0.10	R	L	0	0.40	0.12	0.28	R		2	0	0	0	0.0	0	5	0	0	5	50				PD	N

[1] Reach location denotes the distance upstream from the lower reach break.

[2] Sampling fraction is used to expand habitat measurements to the entire reach (e.g. SF_p = 0.2 if only 1 in every 5th pool was sampled).

[3] Habitat types are: pool (P), riffle (R), glide (G), cascade (C), other (O).

[4] Habitat categories are: primary habitat type (1), side channel (2), tertiary scour pool (3).

[5] Habitat area is calculated for rearing salmonids as length x wetted width.

[6] Spawning gravel type codes are: suitable for anadromous salmon (A), suitable for resident trout and char (R), suitable for both salmon and trout (AR), not suitable (N).

[7] Spawning gravel quality codes are: low (L), moderate (M), high (H), none (N).

[8] Control element codes are: boulder (B), bedrock (R), wood (W), beaver dam (D), other (O).

[9] A pool is classified as a good adult holding pool (Y) if the product of the maximum depth times the total overhead cover is >= 30. Overhead cover is the sum of LWD, boulder, cutbank and overhanging vegetation.

[10] Off-channel habitat codes are: side channel (SC), slough (SL), pond (PD), wetland (WL), other (O).

[11] Off-channel access codes are: no access (N), high flow only (P), most flows (G).

Table 3. Detailed habitat descriptions for selected reaches in Colt and Kobes creeks.

Sub Basin	Reach	Reach location (m) [1]	Habitat type [3]	Habitat category [4]	Habitat length (m)	Gradient (%)	Mean depth (m)	Bank height (m)		Mean Width (m)			Habitat Area (m^2) [5]	Percent bed material (range in mm)					Compaction	Spawning gravel			Pools Only					Functional LWD tally				Off-channel habitat			Channel Disturbances [12]	Barriers [13]
								Left	Right	Bankfull	Wetted	Rearing		<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock		D90 (m)	Type [6]	Quality [7]	Amount (m^2)	Maximum depth (m)	Crest depth (m)	Residual depth (m)	Control element [8]	Good Holding Pool? [9]	Total LWD tally	10 to 20 cm	20 to 50 cm	>50 cm	Woody debris	Boulder	Cutbank	Deep pool	Instream veg.	Total instream cover	Overhanging veg.	Type [10]	Access [11]	Length (m)		

[12] Disturbance indicator codes are: scour (SC), unvegetated bar (DW), sediment wedge (WG), middle-channel bars (MB), extensive riffle zone (LR), low pool frequency (FP), multiple channels (MC), eroding banks (EB), backchannels (BC), LWD parallel to bank (PD), LWD jams (JM), avulsion (AV), >50% silt content (E), other (O).

[13] Potential barrier codes are: none (N), log jam (X), falls > 2 m (F), culvert (CV), bridge (BR), beaver dam (BD), land slide or bank failure (LS), cascade or chute (C), other (O).

Table 4. Area surveyed and percentage of each primary habitat type in Colt and Kobes creeks.

Reach Number	Surveyed Area (m^2)	Percent Habitat Type				
		Pool	Riffle	Glide	Cascade	Other
C3	33323	21.9	51.0	24.3	0.0	2.7
C4	15992	10.5	63.8	25.7	0.0	0.0
C5	3774	25.1	16.5	55.8	2.6	0.0
K6	37594	45.4	27.8	25.5	0.0	0.0
T10-1-1	6656	39.7	36.3	24.0	0.0	0.0
T10-1-2	3496	28.4	47.5	24.1	0.0	0.0

Table 5. Summary of cover attributes in Colt and Kobes creeks.

Reach Number	Habitat Unit	Percent Instream Cover Types						
		LWD	Boulder	Undercut banks	Deep Pool	Instream Vegetion	Total Percent Instream Cover	Overhanging Vegetation
C3	P	7.0	1.7	1.3	0.6	0.3	10.9	28.6
C3	R	0.3	3.5	0.4	0.0	0.0	4.2	14.2
C3	G	1.8	1.6	1.2	0.0	0.3	5.0	20.7
C3	C	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C3	All	2.5	2.6	0.8	0.1	0.1	6.2	20.1
C4	P	8.9	14.2	0.8	0.3	0.4	25.5	10.9
C4	R	1.1	23.9	0.4	0.0	0.4	25.8	5.6
C4	G	5.9	12.4	1.5	0.0	0.4	19.8	12.2
C4	C	n/a	n/a	n/a	n/a	0.4	n/a	n/a
C4	All	3.1	19.9	0.8	0.0	0.4	24.2	7.9
C5	P	0.1	31.6	0.0	0.0	0.0	31.8	22.6
C5	R	1.1	39.4	0.0	0.0	0.0	40.5	8.7
C5	G	0.0	25.6	0.4	0.0	0.0	26.0	7.6
C5	C	0.0	70.0	0.0	0.0	0.0	70.0	25.0
C5	All	0.2	30.5	0.2	0.0	0.0	30.9	12.0
K6	P	4.8	8.2	1.9	2.4	0.7	17.7	7.0
K6	R	1.0	12.6	0.3	0.0	1.5	15.3	4.7
K6	G	9.7	10.3	0.8	0.0	0.9	21.5	6.1
K6	C	na	n/a	n/a	n/a	n/a	n/a	n/a
K6	All	4.9	9.9	1.2	1.2	1.0	17.9	6.1
T10-1-1	P	6.3	0.3	8.2	1.3	0.0	16.1	14.0
T10-1-1	R	1.8	3.0	2.3	0.0	0.2	7.2	6.9
T10-1-1	G	4.9	1.2	4.6	0.2	0.0	10.8	5.6
T10-1-1	C	n/a	n/a	n/a	n/a	n/a	n/a	n/a
T10-1-1	All	4.3	1.5	5.2	0.6	0.1	11.6	9.4
T10-1-2	P	0.7	1.2	5.3	0.0	0.4	7.6	9.2
T10-1-2	R	0.0	3.5	1.1	0.0	0.8	5.4	4.8
T10-1-2	G	2.4	3.1	4.1	0.0	0.2	9.8	10.0
T10-1-2	C	n/a	n/a	n/a	n/a	n/a	n/a	n/a
T10-1-2	All	0.8	2.7	3.0	0.0	0.5	7.1	7.3

Table 6. Summary of LWD attributes for Colt and Kobes Creek.

Reach Number	Habitat Unit	Surveyed Length (m)	Mean Bank Full Width (m)	Number of Functional LWD [1]				Total all LWD	Recommended Number of LWD pieces [2]		
				<20 cm	20-50 cm	>50 cm	Total (>20 cm)		10m x 0.35m pieces	10m x 0.5m pieces	10m x 0.75m pieces
C3	All	6078	9.4	337	327	27	691	930	5065	2481	1100
C4	All	3138	9.2	156	124	16	296	369	2615	1281	568
C5	All	609	8.7	4	3	0	7	13	508	249	110
K6	All	5050	11.4	279	148	47	474	1611	2104	1031	457
T10-1-1	All	1704	5.9	94	70	20	184	230	1420	696	308
T10-1-2	All	887	5.4	11	10	3	24	40	739	362	161

[1] To be termed functional, a piece of LWD most be either providing cover, a control element for a pool or modifies channel morphology.

[2] Modified from Cederholm et al. (1997) such that recommended volume of LWD per 100 m of stream is 80 m^3 for streams with less than or equal to 10 m bankfull width and 40 m^3 for streams with greater than 10 m bankfull width.

Table 7. Summary of bed material and spawning attributes in Colt and Kobes creeks.

Reach Number	Bed Material Composition (%)						
	<2 mm	2-64 mm	64-256 mm	>256 mm	Bed rock	Spawning Quantity (m^2) [1]	Spawning Quality [2]
C3	19	33	40	8	0	11658	Good
C4	10	25	43	20	1	4497	Good
C5	8	27	34	31	0	1090	Fair
K6	28	27	36	10	0	11271	Fair
T10-1-1	34	38	26	2	0	2809	Fair
T10-1-2	28	37	33	3	0	1347	Fair

[1] Value = (%gravels (2-64 mm) + 6 % cobbles (64-256 mm))*length*wetted width . (surveyed area only)

[2] Poor is fines (<2 mm) >25%, Fair if fines >15% and uncompacted, Good if fines < =15% and uncompacted.

Table 8. Diagnostic summary of salmonid habitat condition in Colt and Kobes creeks.

Reach number	% pools [1]		Pool frequency [2]		Holding pools [3]		LWD Pieces [4]		% Wood in pools [5]		% Boulder in riffles [6]		% Overhead pool cover [7]		Gravel quantity [8]		Gravel quality [9]		Off-channel habitat [10]	
	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
C3	21.9	Poor	8.2	Poor	9.2	Good	0.28	Inadequate	7.0	Fair	3.5	Poor	26.1	Good	35.0	Good	19	Good	4	Good
C4	10.5	Poor	12.7	Poor	7.0	Good	0.23	Inadequate	8.9	Fair	23.9	Fair	31.7	Good	28.1	Good	10	Good	1	Fair
C5	25.1	Poor	23.4	Poor	4.9	Good	0.03	Inadequate	0.1	Poor	39.4	Good	42.9	Good	28.9	Good	8	Fair	0	Poor
K6	45.4	Good	8.2	Poor	3.2	Good	0.46	Inadequate	4.8	Poor	12.6	Fair	22.0	Good	30.0	Good	28	Fair	1	Fair
T10-1-1	39.7	Fair	9.9	Poor	5.3	Good	0.26	Inadequate	6.3	Fair	3.0	Poor	20.4	Good	42.2	Good	34	Fair	5	Good
T10-1-2	28.4	Poor	9.6	Poor	1.1	Fair	0.07	Inadequate	0.7	Poor	3.5	Poor	13.8	Fair	38.5	Good	28	Fair	0	Poor

[1] Value is percent pools (%P = total pool area / total wetted area). Poor < 30%, Fair <= 40%, Good > 40% (for gradients 2-5%).

[2] Value is number of bankfull widths per pool (FP = mean bankfull width / total number of pools). Good < 2, Fair <= 4, Poor > 4.

[3] Value is the number of pools per 1000m for which the product of the maximum depth times the total overhead cover is >= 30. Poor < 1, Fair <= 2, Good > 2.

[4] Value is the number of functional LWD divided by the recommended number of LWD (10m x 0.5m). Inadequate < 1, Adequate >=1.

[5] Value is the mean percent wood cover in pools. Poor < 6%, Fair <= 20%, Good > 20%.

[6] Value is the percent boulder cover in riffles. Poor < 10%, Fair <= 30%, Good > 30%.

[7] Value is the percent overhead cover in pools. Poor < 15%, Fair < 30%, Good > 30%.

[8] Value is percent spawning area (%Q = spawning area / total wetted area). Poor < 10%, Fair <= 25%, Good > 25%.

[9] Value is the percent of substrate in <2 mm category (fines). Poor > 25%, Fair >15% and uncompacted, Good < =15% and uncompacted.

[10] Value is the number of off channel habitats with good access. Poor < 1, Fair <= 2, Good > 2.

Table 9. Summary of estimated flows for Colt Creek, based on gauged streams in the Peace River area (after Yazvenko et al. 2002a). Assumes Colt Creek drainage area is 154 km^2.

Flow	Parameter	Return Period (yr)			
		2	10	25	50
Daily peak flows	Discharge (m^3/s)	24	34	45	55
Daily peak flows	Unit Flow ($l/s/km^2$)	159	221	294	360
Instantaneous peak flows	Discharge (m^3/s)	21	28	47	68
Instantaneous peak flows	Unit Flow ($l/s/km^2$)	264	357	590	863
7-day low flow	Discharge (m^3/s)	0.13	0.07		
7-day low flow	Unit Flow ($l/s/km^2$)	1.6	0.9		

Table 10. Summary of estimated flows for Upper Kobes Creek mainstem (i.e., East Branch), based on gauged streams in the Peace River area (after Yazvenko et al. 2002b). Assumes upper east tributary of Kobes Creek drainage area is 90.4 km^2

Flow	Parameter	Return Period (yr)			
		2	10	25	50
Daily peak flows	Discharge (m^3/s)	14	20	27	33
Daily peak flows	Unit Flow ($l/s/km^2$)	159	221	294	360
Instantaneous peak flows	Discharge (m^3/s)	21	28	47	68
Instantaneous peak flows	Unit Flow ($l/s/km^2$)	264	357	590	863
7-day low flow	Discharge (m^3/s)	0.13	0.07		
7-day low flow	Unit Flow ($l/s/km^2$)	1.6	0.9		

Table 11. Channel characteristics of Colt Creek.

Parameter	Reach 3	Reach 4	Reach 5
Drainage area (km^2)	49.0	25.4	14.9
Bankfull width (m)	9.4	9.2	8.7
Bankfull depth (m)	0.57	0.47	0.47
Gradient (%)	1.15	3.0	1.3
Median (D_{50}) bed material (cm)	7.5	4.7	12.3
D_{90} bed material (cm)	8.7	13.4	33.8
Bankfull roughness est.	0.026	0.024	0.028
Bankfull tractive force (kg/m^2)	6.6	14.1	6.1
Bankfull discharge (m^3/s)	15.2	18.9	10.1
Present discharge (m^3/s)	0.1816*	-	1.3168

* aggraded, most water subsurface

Table 12. Channel characteristics of Kobes Creek.

Parameter	Reach 6	Reach 10-1
Drainage area (km^2)	18.2	9.3
Bankfull width (m)	11.4	5.9
Bankfull depth (m)	0.6	0.6
Gradient (%)	0.6	2.0
Median (D_{50}) bed material (cm)	6.5	6.2
D_{90} bed material (cm)	9.7	9.5
Bankfull roughness est.	0.025	0.025
Bankfull tractive force (kg/m^2)	3.6	12.0
Bankfull discharge (m^3/s)	15.1	14.2
Present discharge (m^3/s)	0.3774	0.1256

FIGURES

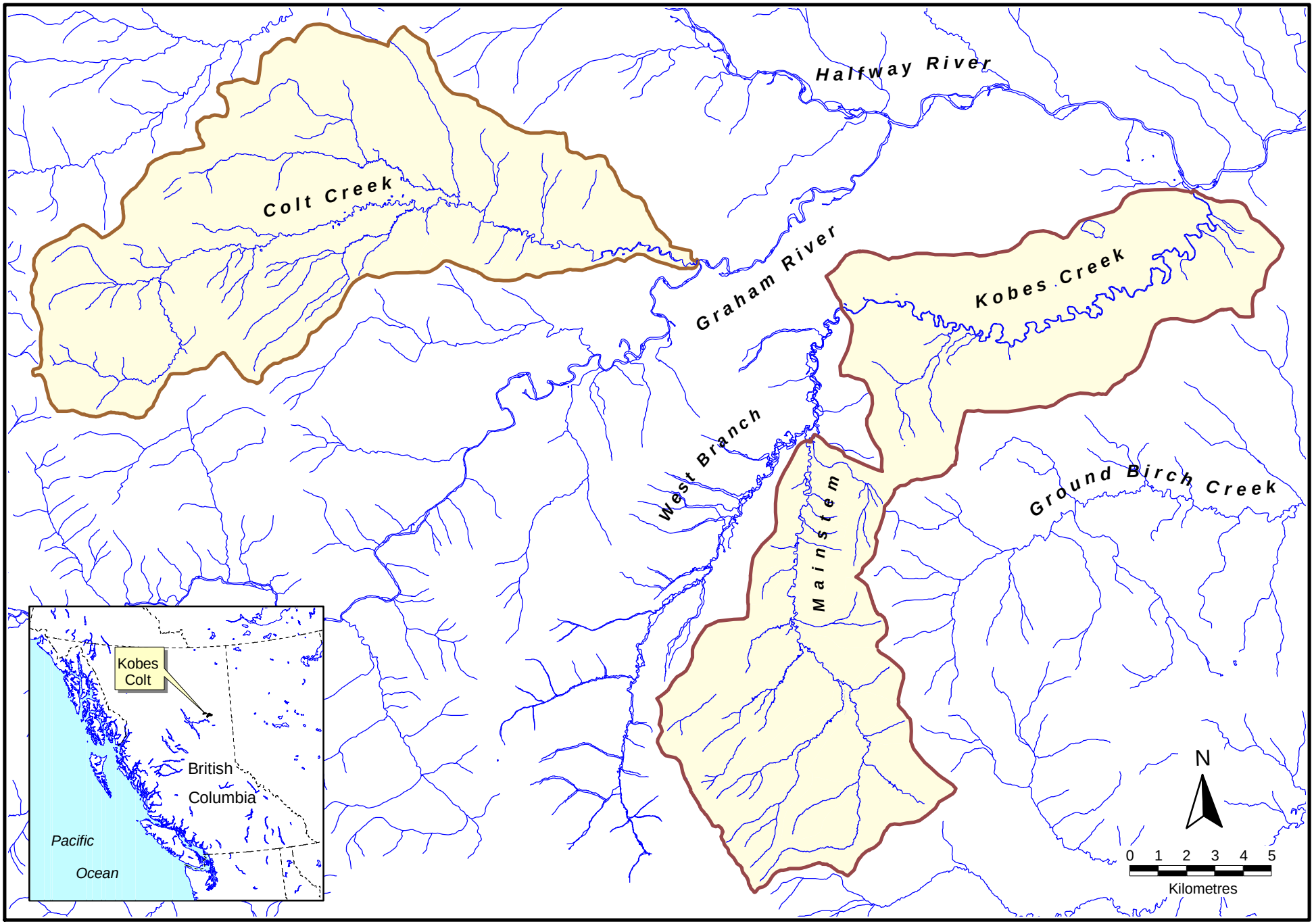

Figure 1. Index map of Kobes and Colt Creek Watersheds showing the location of the study area in British Columbia.

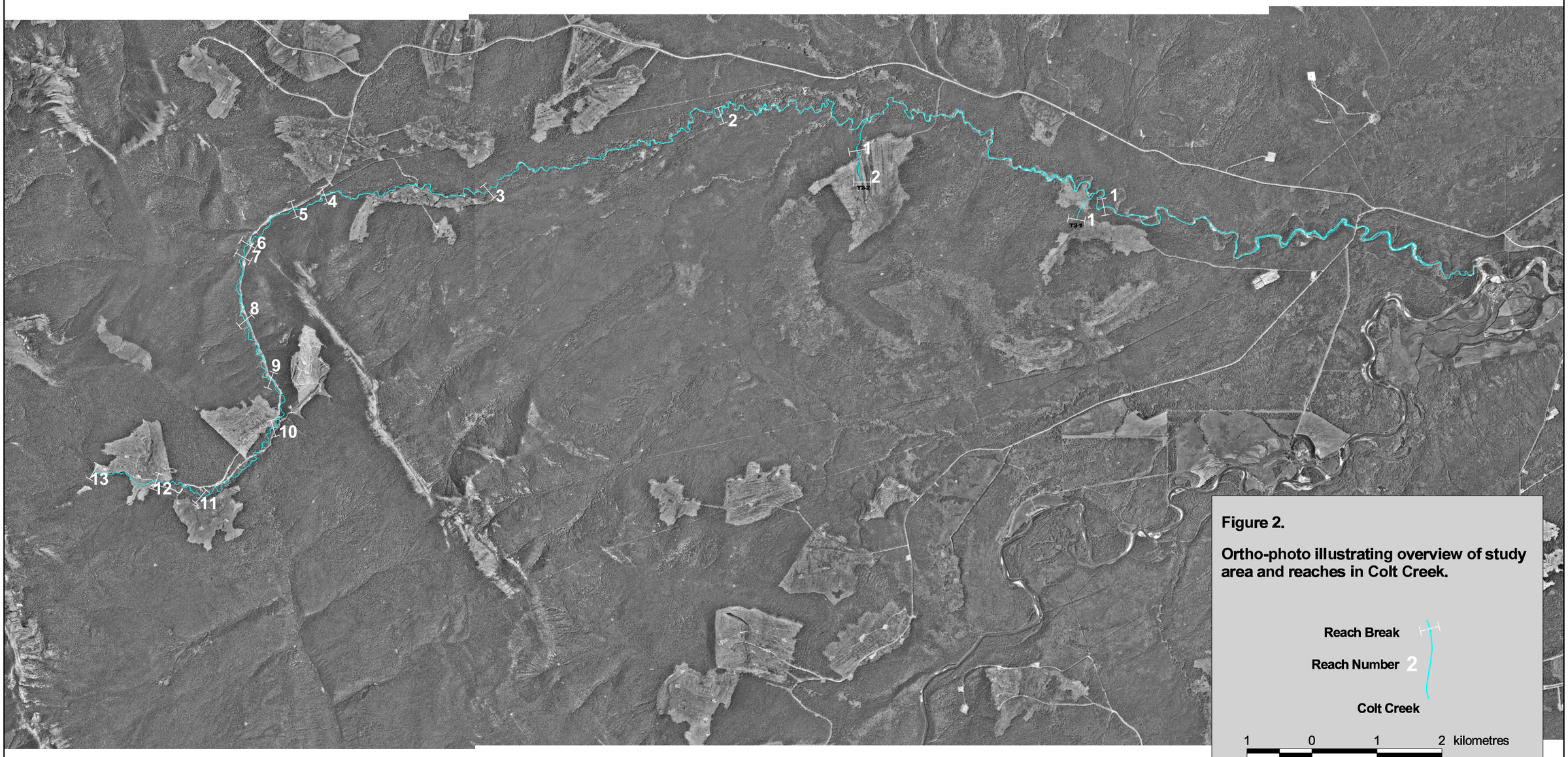

Figure 2.

Ortho-photo illustrating overview of study area and reaches in Colt Creek.

Reach Break

Reach Number 2

Colt Creek

1 0 1 2 kilometres

Scale 1:60,000

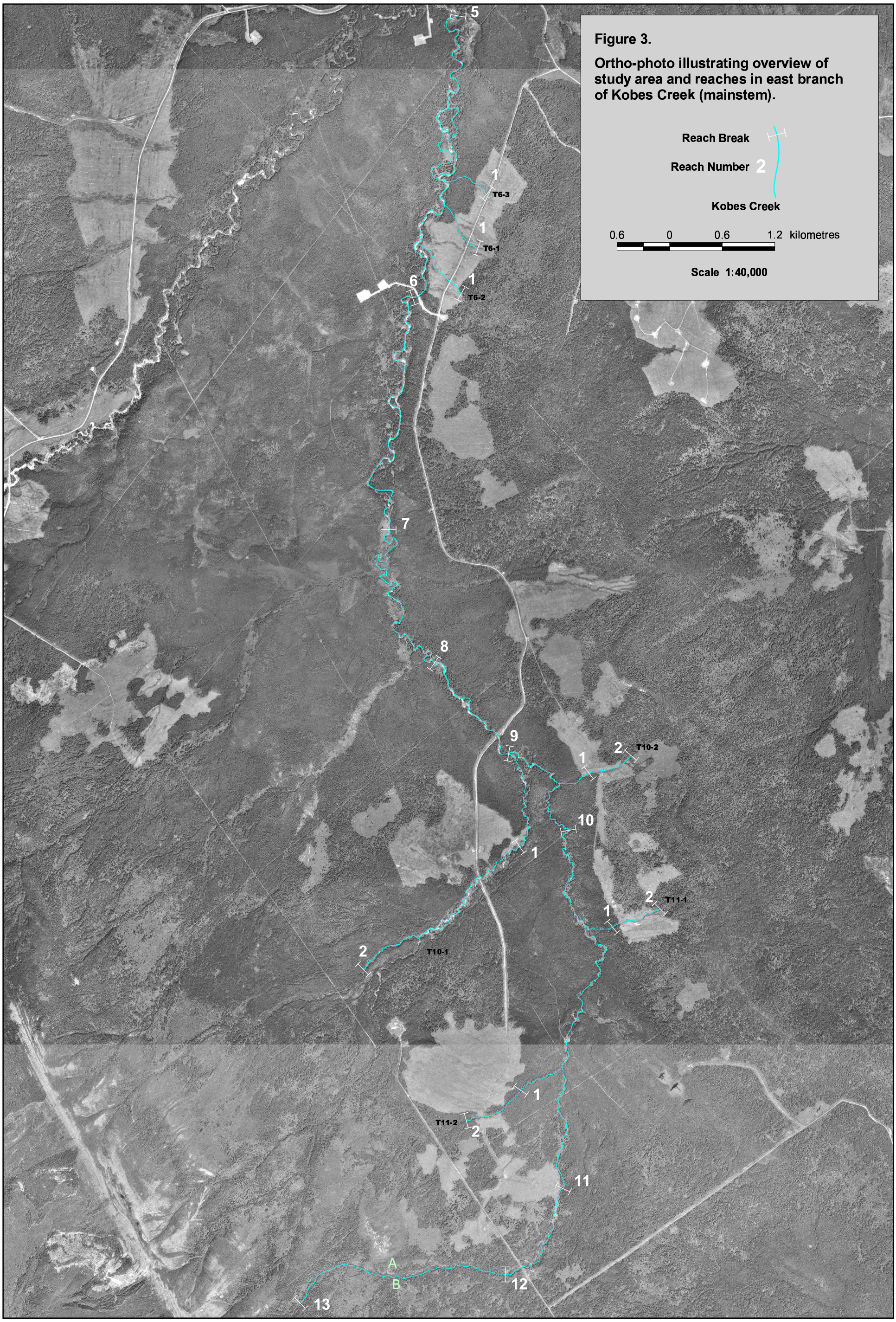

Figure 3.

Ortho-photo illustrating overview of study area and reaches in east branch of Kobes Creek (mainstem).

Reach Break

Reach Number 2

Kobes Creek

0.6 0 0.6 1.2 kilometres

Scale 1:40,000

Figure 4. Longitudinal Profile for Colt Creek and Tributaries.

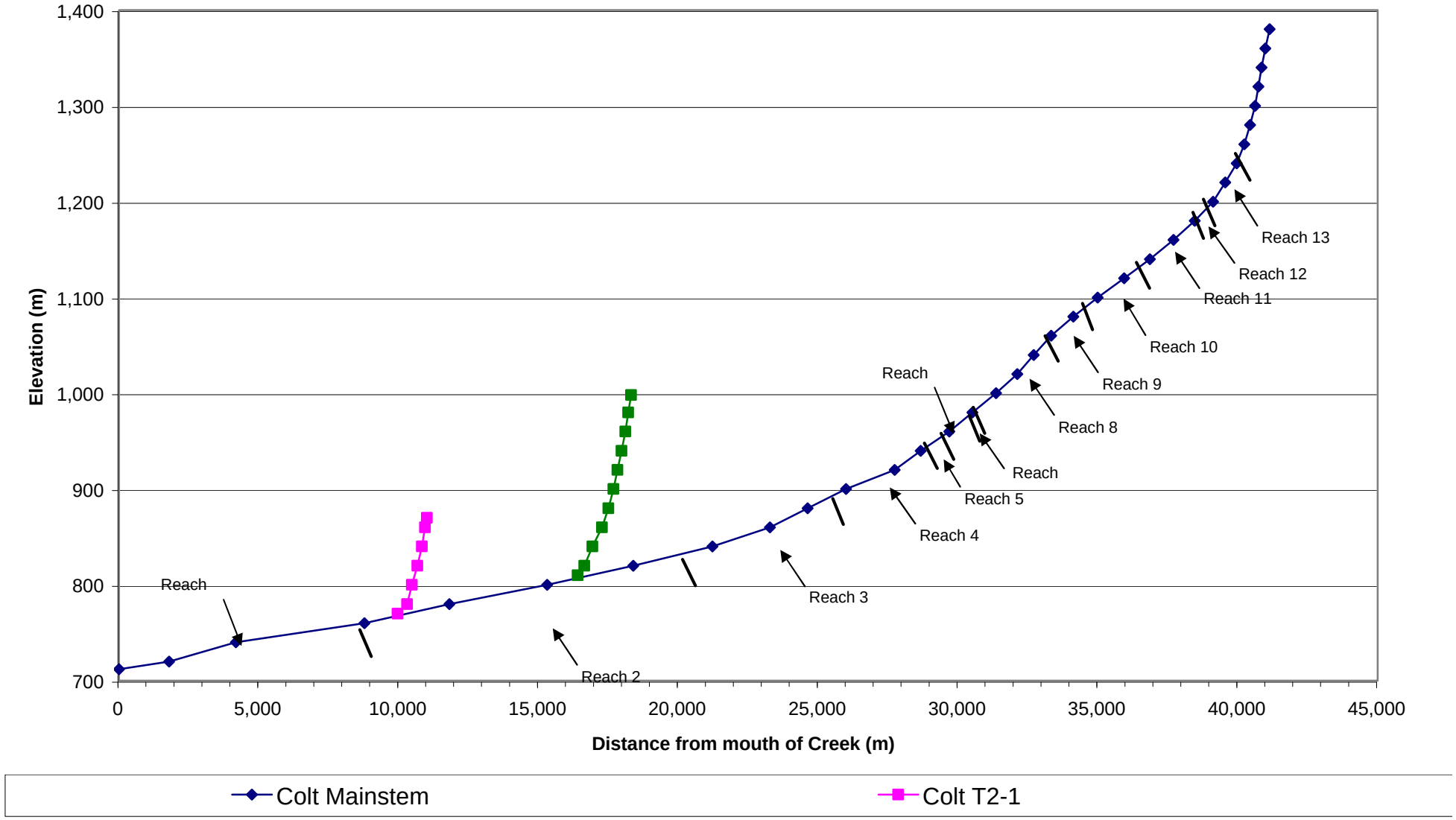

Figure 5. Bed paving material size distribution in Reach 3 of Colt Creek.

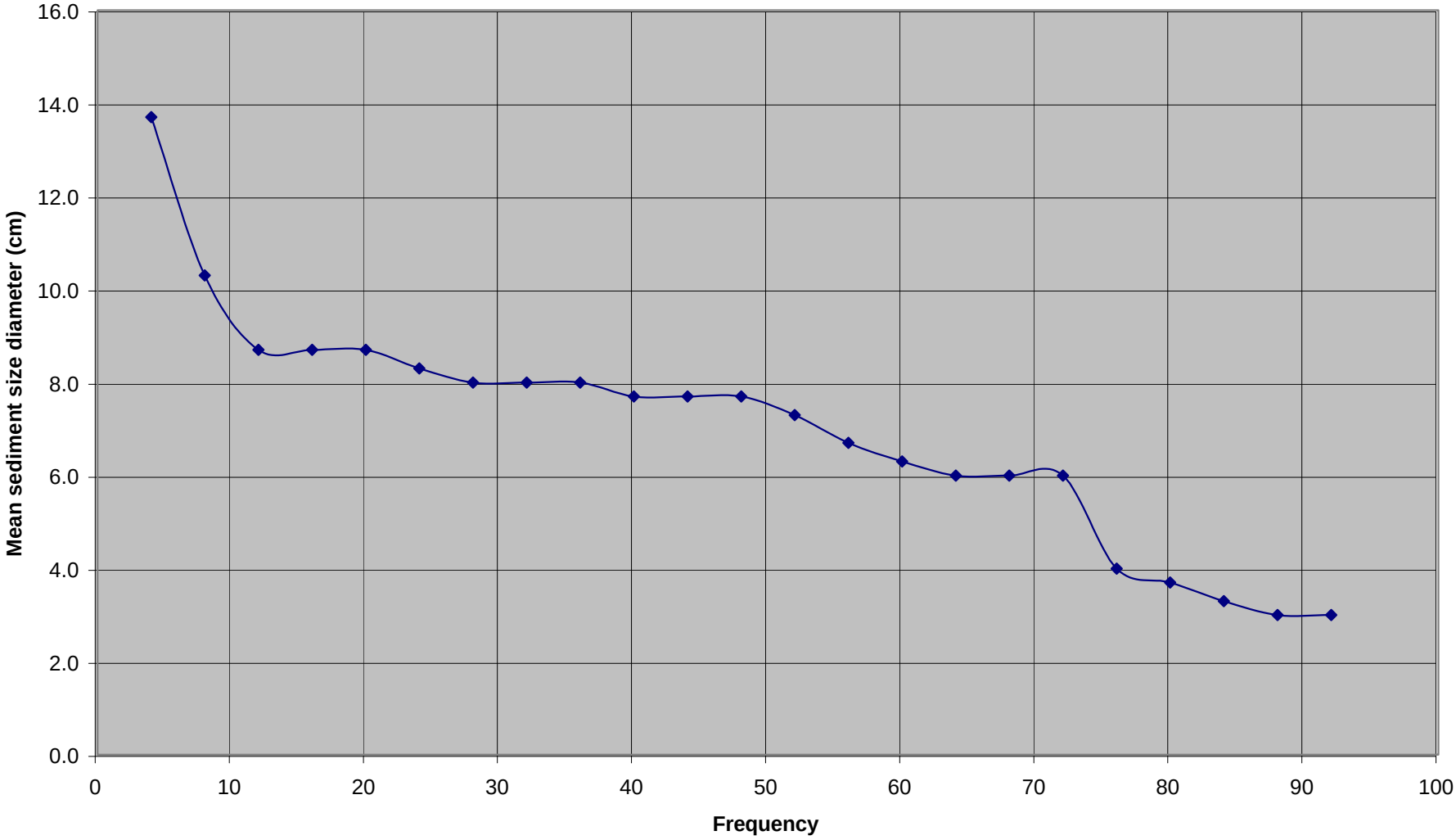

Figure 6. Bed paving material size distribution in Reach 4 of Colt Creek.

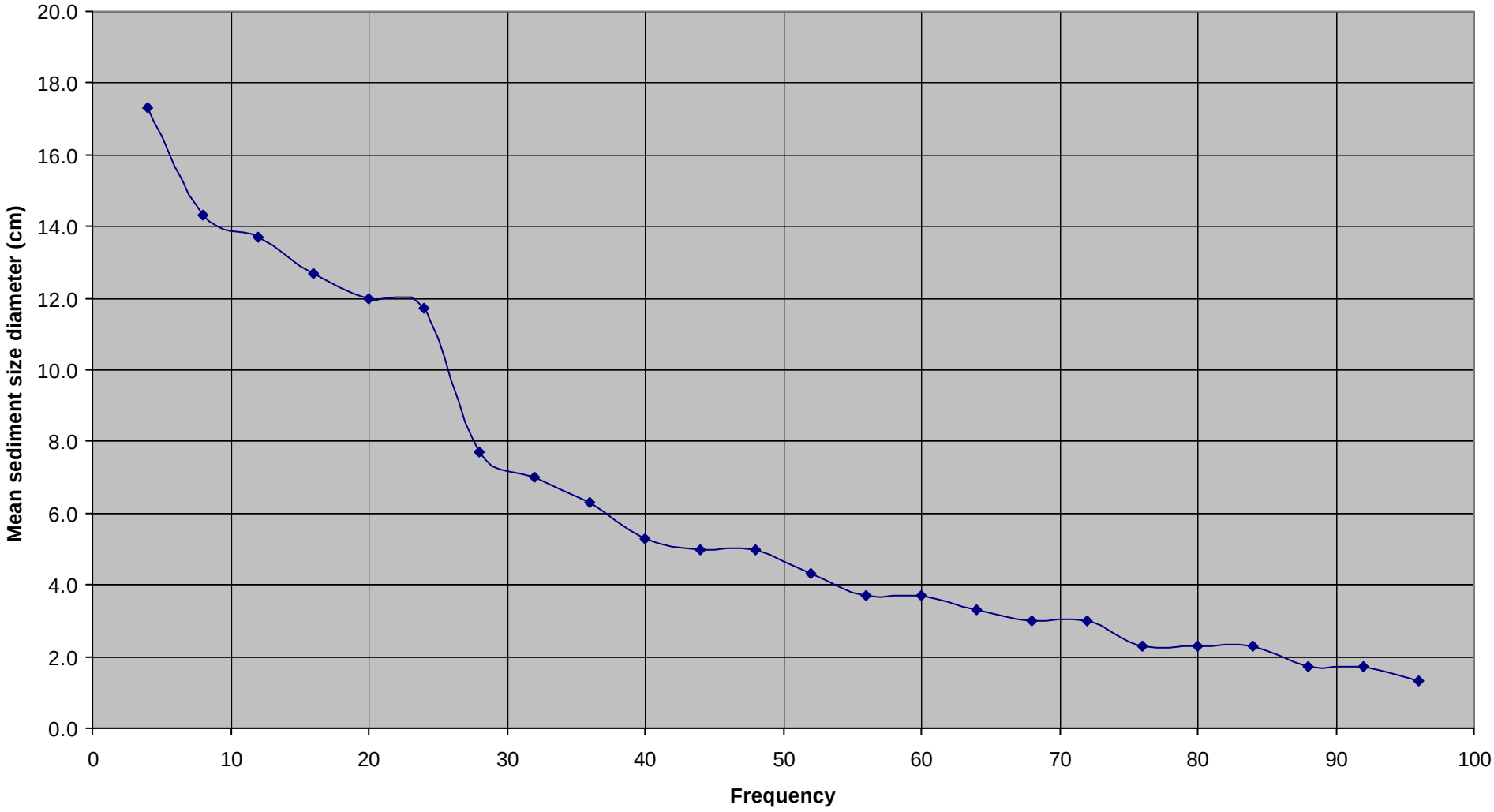

Figure 7. Bed paving material size distribution in Reach 5 of Colt Creek.

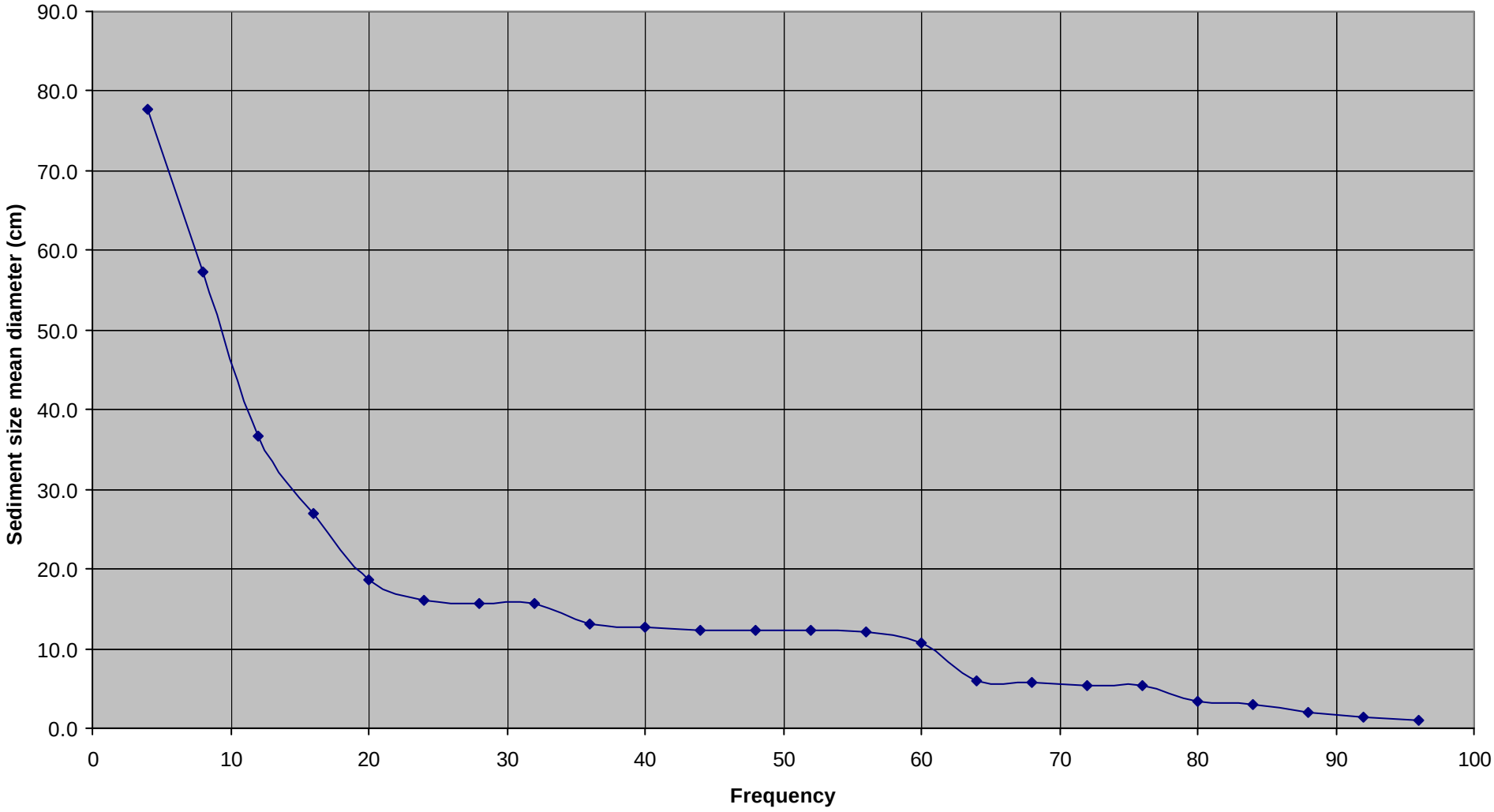

Figure 8. Typical cross section in Reach 3 of Colt Creek.

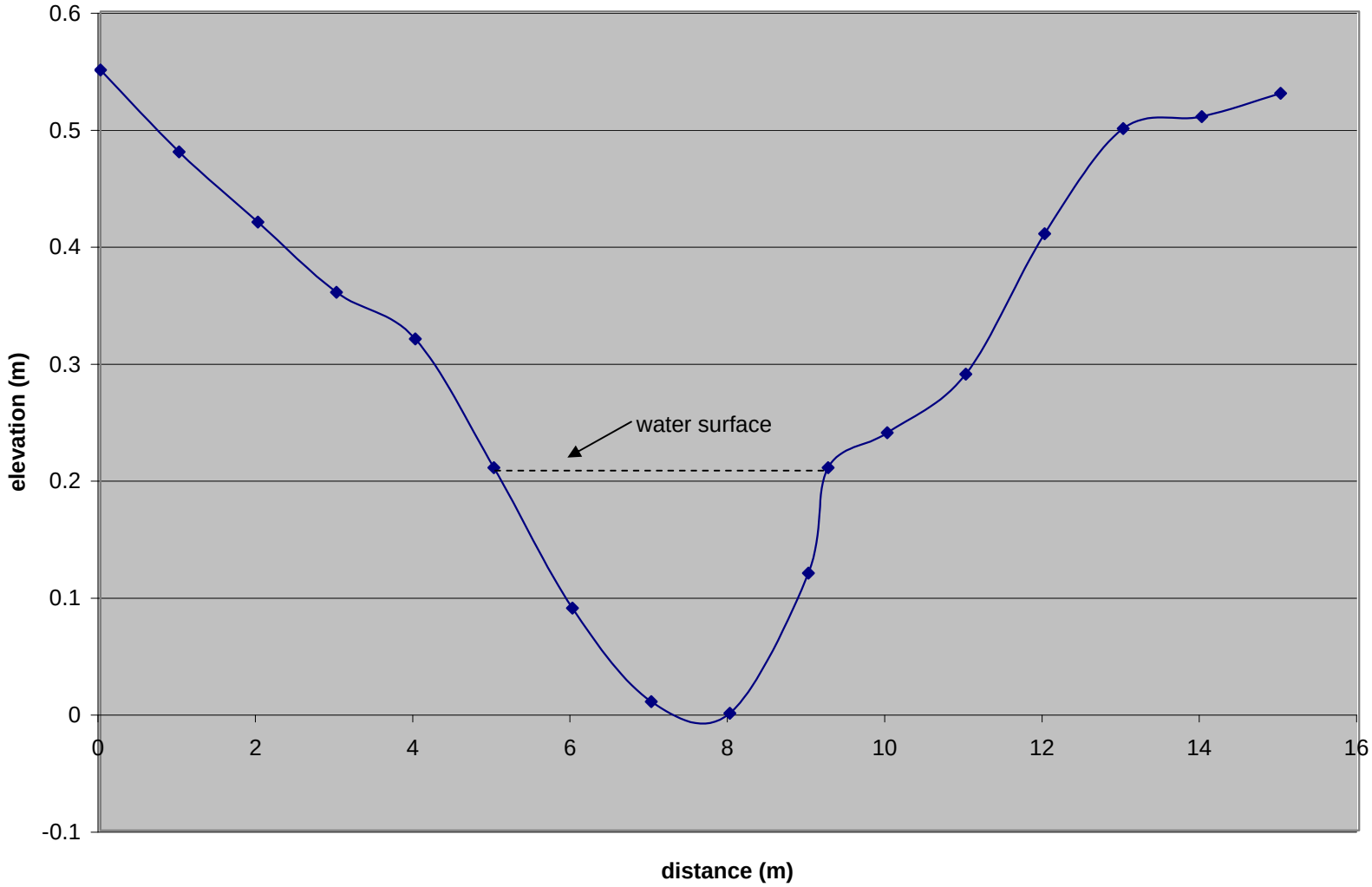

Figure 9. Typical cross section in Reach 5 of Colt Creek.

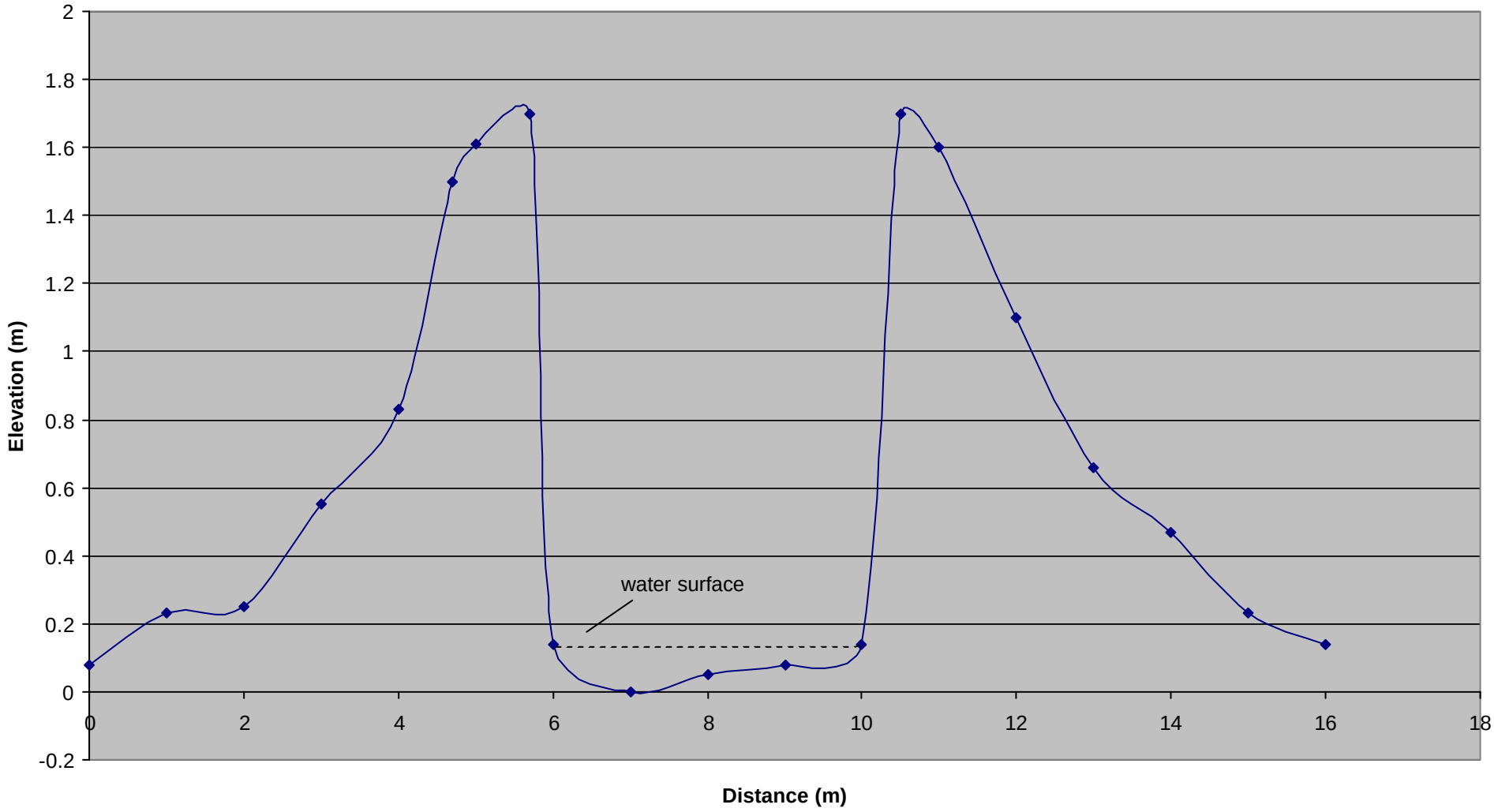

Figure 10. Longitudinal Profile for Kobes Creek Mainstem and Tributaries.

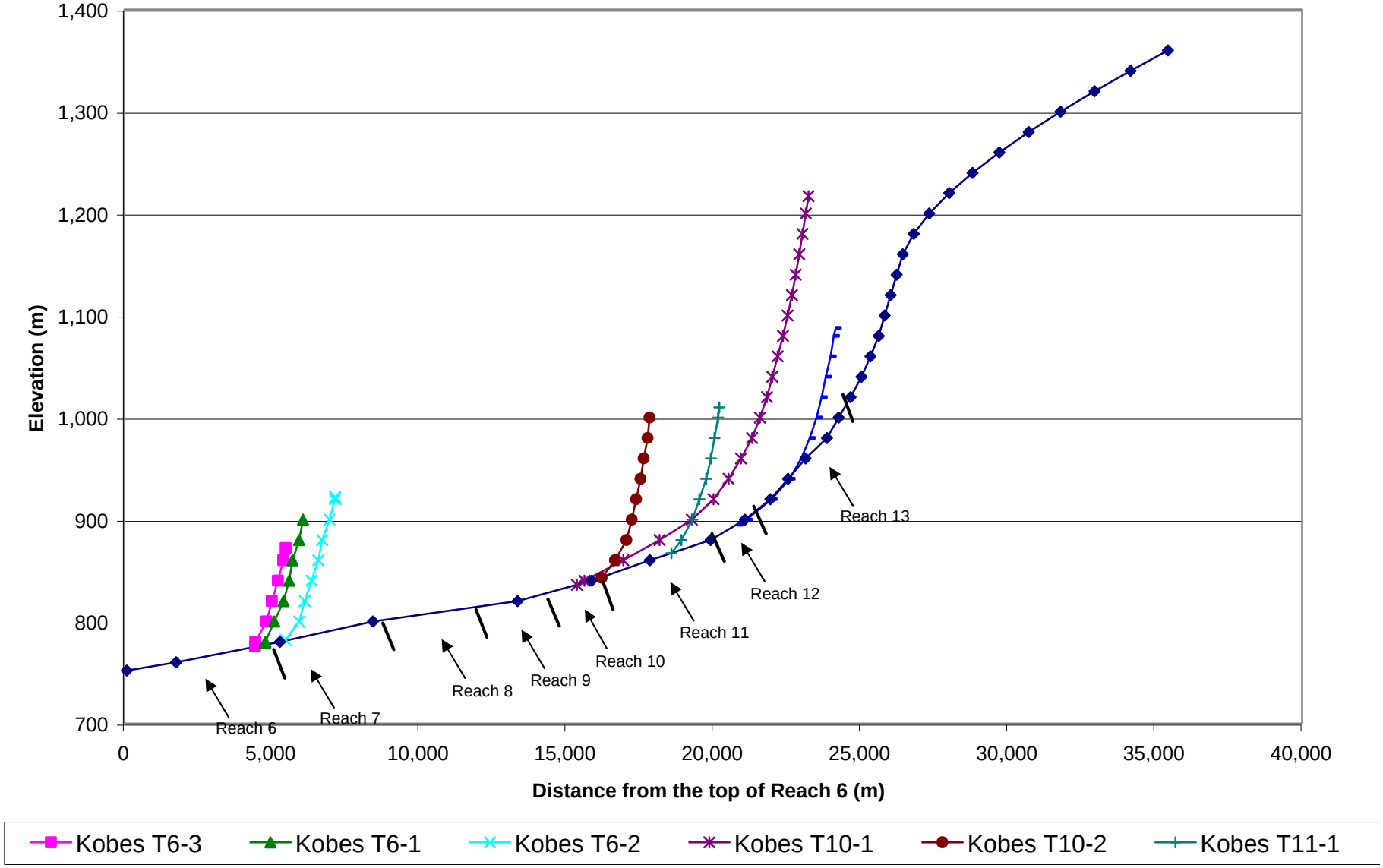

Figure 11. Bed paving material size distribution in Reach 6 of Kobes Creek.

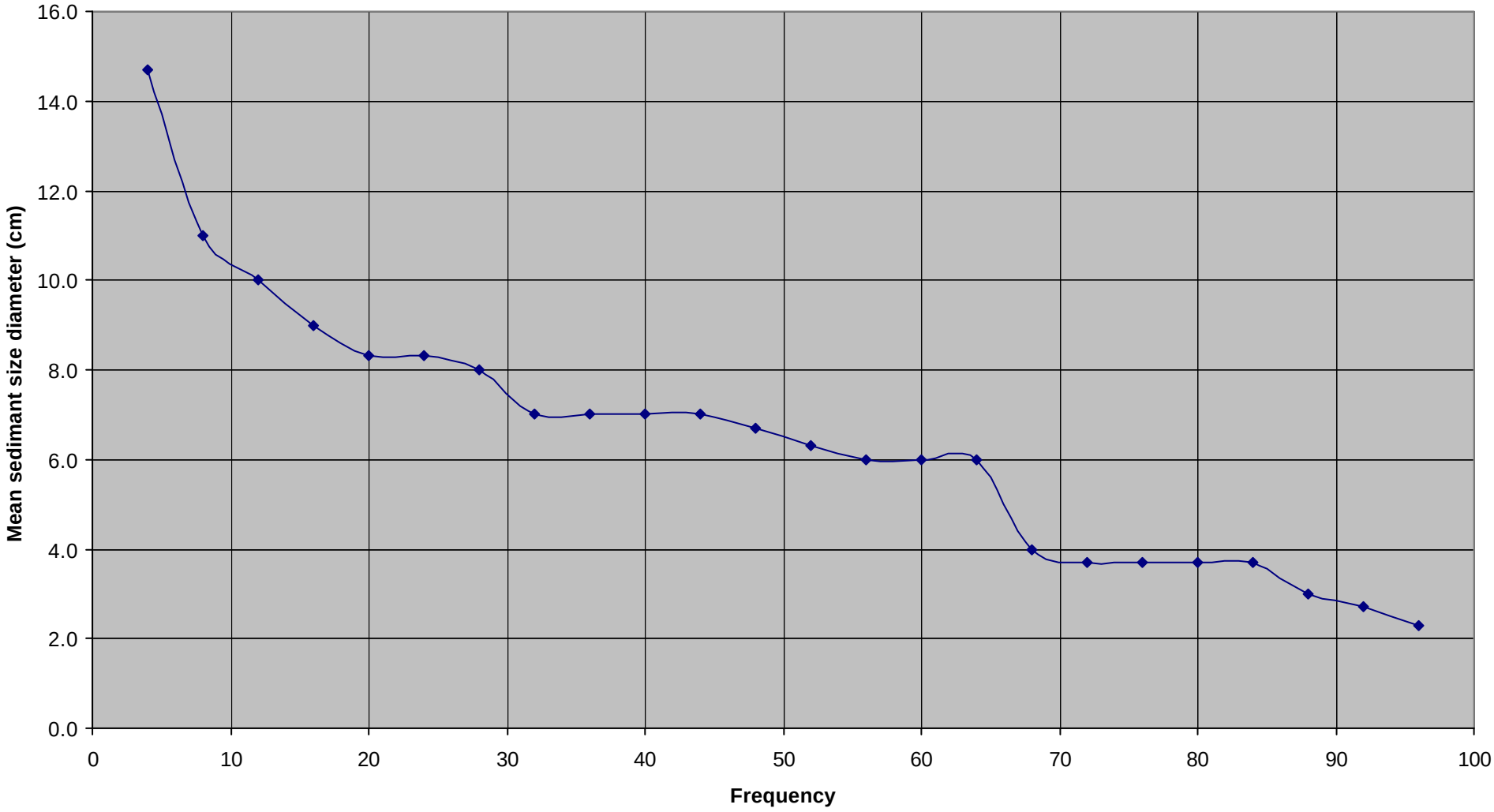

Figure 12. Bed paving material size distribution in Reach 10-1 of Kobes Creek.

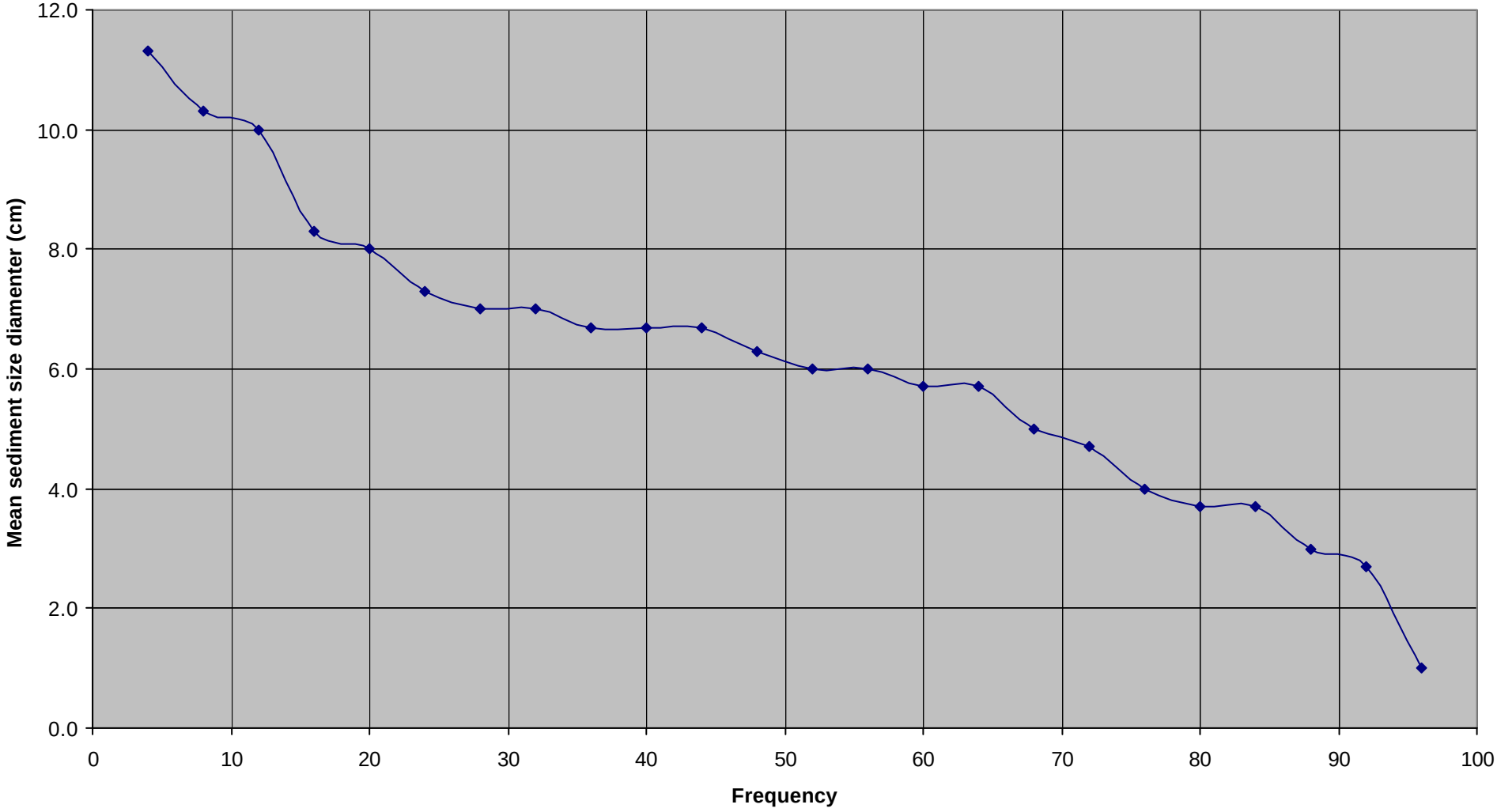

Figure 13. Typical cross section in Reach 6 of Kobes Creek

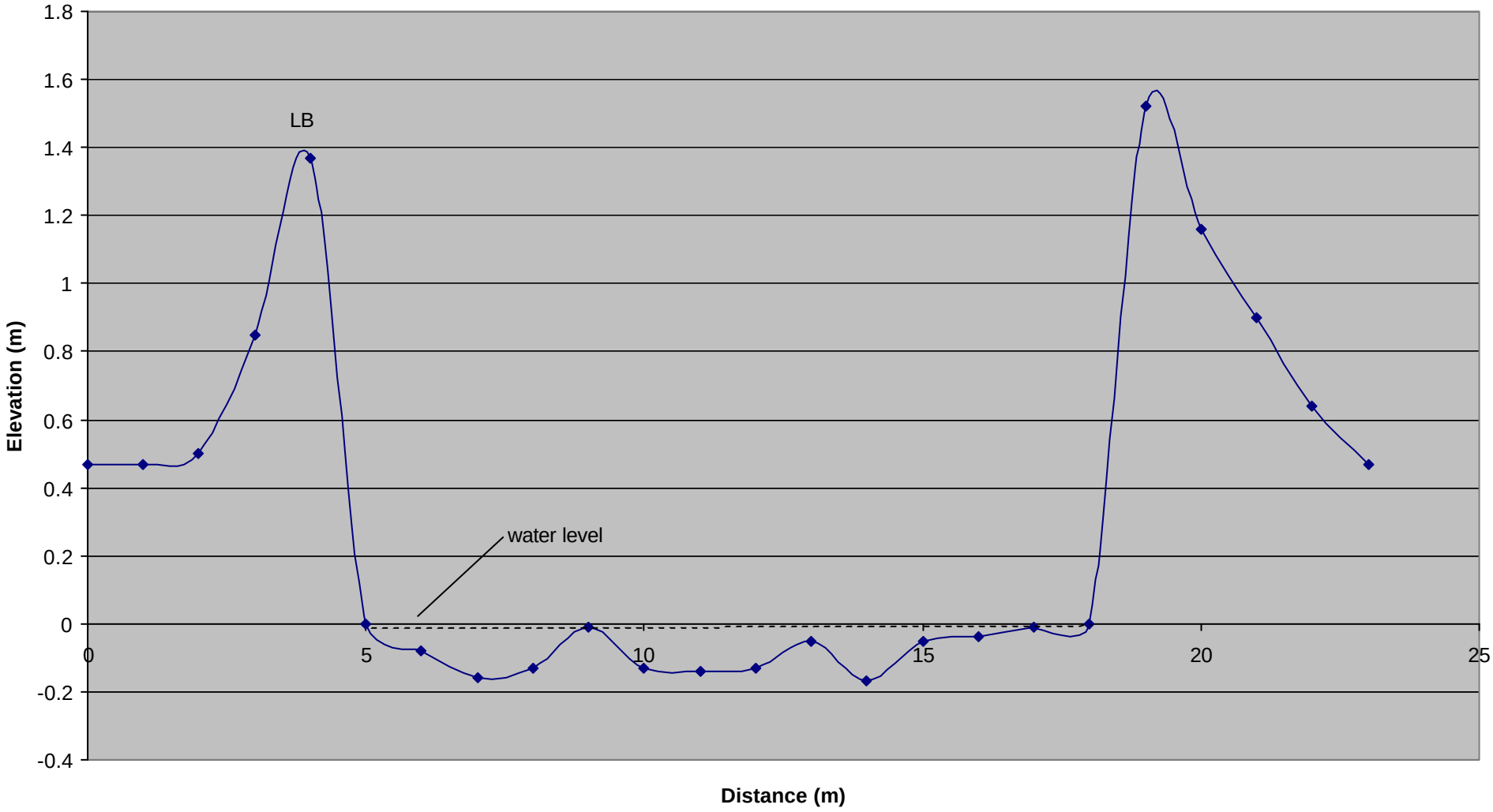

Figure 14. Typical cross section of Reach 10-1 of Kobes Creek.

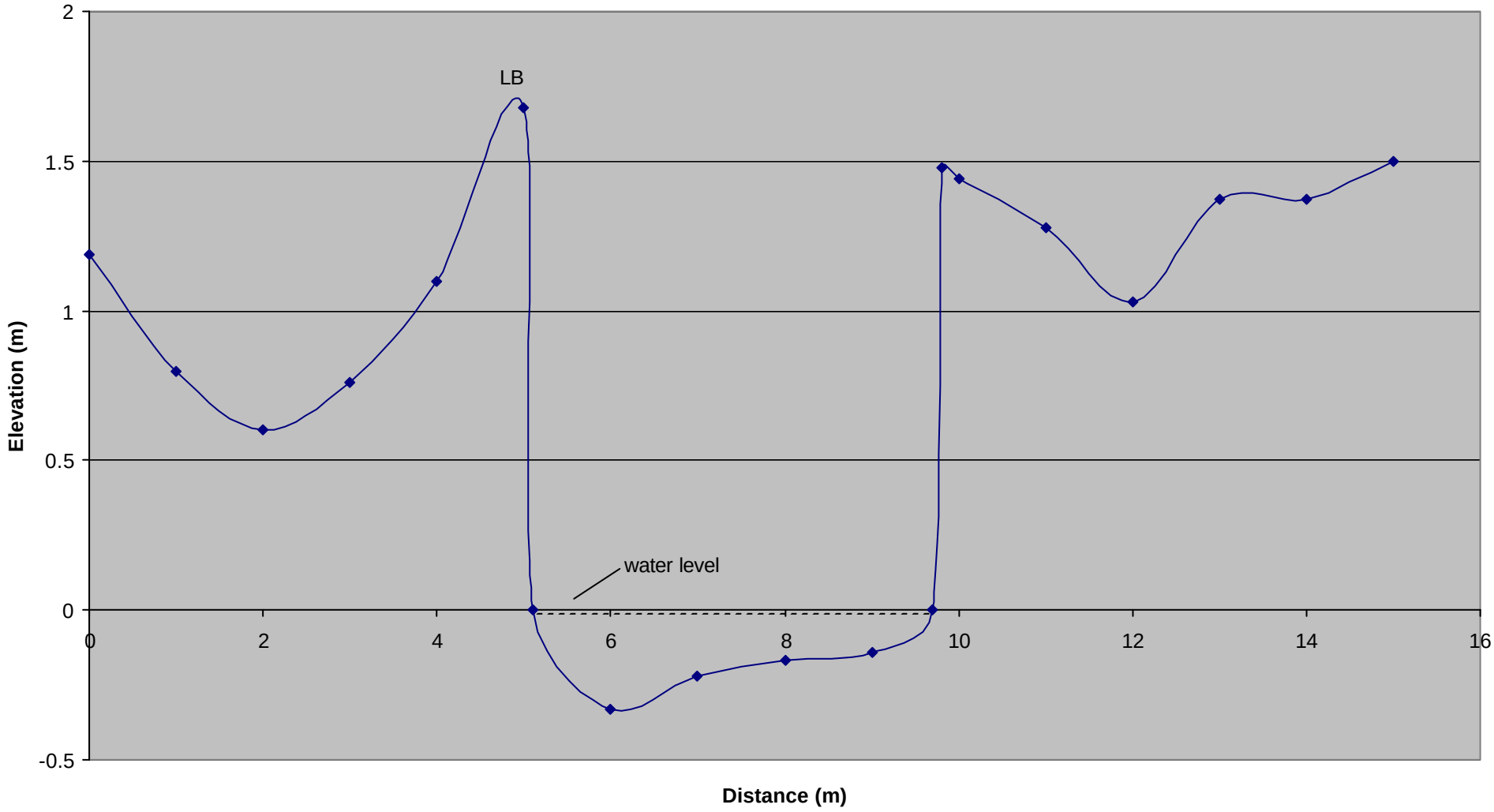

PHOTO PLATES

Photo 1. Colt Creek, Reach 4, downstream view Site 1 at N 56°28.586 W 122°35.888. Photo date 30 September 2001.

Photo 2. Colt Creek, Reach 4, downstream view Site 2 at N 56°28.573 W 122°35.933. Photo date 30 September 2001.

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Photo 3. Colt Creek, Reach 4, upstream view Site 3 at N 56°28.580 W 122°35.929. Photo date 30 September 2001.

Photo 4. Colt Creek, Reach 4, upstream view Site 4 at N 56°28.582 W 122°35.992. Photo date 30 September 2001.

Photo 5. Colt Creek, Reach 4, upstream view Site 5 at N 56°28.604 W 122°36.053. Photo date 30 September 2001

Photo 6. Colt Creek, Reach 4, upstream view Site 6 at N 56°28.613 W 122°36.090. Photo date 30 September 2001.

Photo 7. Colt Creek, Reach 4, upstream view Site 7 at N 56°28.555 W 122°36.111. Photo date 30 September 2001.

Photo 8. Colt Creek, Reach 4, downstream view Site 8 at N 56°28.546 W 122°36.113. Photo date 30 September 2001.

Photo 9. Colt Creek, Reach 4, downstream view Site 9 at N 56°28.550 W 122°36.166. Photo date 30 September 2001.

Photo 10. Colt Creek, Reach 4, Site 10 at N 56°28.553 W 122°36.201. Photo date 30 September 2001.