Bull Trout Final Critical Habitat Justification: Rationale for Why Habitat is Essential, and Documentation of Occupancy

Chapter 10. Mid-Columbia Recovery Unit—Upper Columbia River Basins Critical Habitat Unit

Chapter 10. Upper Columbia River Basins Critical Habitat Unit

The Upper Columbia River Basins CHU includes the entire drainages of three CHSUs in central and north-central Washington on the east slopes of the Cascade Range and east of the Columbia River between Wenatchee, Washington, and the Okanogan River drainage: (1) Wenatchee River CHSU in Chelan County; (2) Entiat River CHSU in Chelan County; and (3) Methow River CHSU in Okanogan County. The Upper Columbia River Basins CHU also includes the Lake Chelan and Okanogan basins which historically provided spawning and rearing and FMO habitat and currently the Chelan Basin is essential and provides for FMO habitat to support migratory bull trout in this CHU. No critical habitat is proposed in the Okanogan River at this time. Bull trout have been recently observed in the Okanogan River near Osoyoos Lake, but it is unclear if it is essential habitat and what role this drainage may play in recovery. A total of 1,074.9 km (667.9 mi) of streams and 1,033.2 ha (2,553.1 ac) of lake surface area in this CHU are proposed as critical habitat to provide for spawning and rearing, FMO habitat to support three core areas essential for conservation and recovery.

10.1 Methow River Critical Habitat Subunit

The Methow River CHSU supports adfluvial, fluvial, and resident life history forms of bull trout and includes the mainstem Methow River and tributaries from its confluence with the Columbia River (at 843.0 km (523.5 mi)) to its headwaters at the crest of the Cascade Range. The Methow drainage is located on the eastern slopes of the Cascade Range in north-central Washington. The Methow River drains east into the Columbia River near the town of Pateros, Washington. The Methow River supports both two of three allucustrine populations (populations that live in lakes and migrate downstream to spawn in a lake outlet) in the CHU: one in Black Lake within the Chewuch drainage and one in the Lost River where they spawn both above and below the lakes. Populations of bull trout in this CHSU rely heavily on migratory corridors to and from the Columbia River. A total of 558.3 km (346.9 mi) of streams and a surface area of 46.5 ha (114.7 ac) for four lakes is proposed for designation and provide for spawning and rearing and FMO habitat for the Methow local population.

The following water bodies are included in this CHSU (Table 35):

(A) The Methow River from its confluence with the Columbia River upstream 83.6 km (52.0 mi) to its confluence with the Chewuch River provides FMO habitat and from that point upstream 55.5 km (34.5 mi) to the Lost River it provides spawning and rearing habitat. From that point upstream, the Methow River turns into the West Fork Methow. The West Fork Methow from the confluence of the Methow River and the Lost River upstream 8.7 km (5.4 mi) to a barrier falls provides spawning and rearing habitat. Robinson Creek from its confluence with the Methow River upstream 1.6 km (1.0 mi) to 10ft high falls; Rattlesnake Creek from its confluence with the Methow River upstream 0.5 km (0.3 mi) to a barrier falls; and Trout Creek from its confluence with the Methow River upstream 11.5 km (7.2 mi) to its headwaters provide spawning and rearing habitat.

(B) Gold Creek from its confluence with the Methow River upstream 1.8 km (1.1 mi) to the confluence of North Fork Gold Creek and South Fork Gold Creek provides FMO habitat. North Fork Gold Creek from its confluence with the North Fork upstream 8.3 km (5.1 mi) to it headwaters; Foggy Dew Creek from its confluence with the North Fork Gold Creek upstream 10.1 km (6.3 mi) to a substantial falls; and Crater Creek from its confluence with North Fork

Gold Creek upstream 4.7 km (2.9 mi) to a 40 ft barrier falls provide spawning and rearing habitat.

(C) Beaver Creek from its confluence with the Methow River upstream 20.9 km (13.0 mi) to its confluence with Lightening Creek provides FMO habitat and from that point upstream 1.6 km (1.0 mi) to a series of falls provides spawning and rearing habitat. Lightening Creek from its confluence with Beaver Creek upstream 0.40 km (0.25 mi) to a barrier falls provides spawning and rearing habitat. Blue Buck Creek from its confluence with Beaver Creek upstream 9.7 km (6.0 mi) to its headwaters provide spawning and rearing habitat.

(D) The Twisp River from its confluence with the Methow River upstream 47.5 km (29.5 mi), approximately 1/4 mile above Roads End Campground at a 15ft high falls. Twisp Rivers provides spawning and rearing habitat. Little Bridge Creek from its confluence with the Twisp River upstream 15.8 km (9.8 mi) to its headwaters; Buttermilk Creek from its confluence with the Twisp River upstream 4.1 km (2.5 mi) to the East and West Forks Buttermilk Creek; the East Fork of Buttermilk Creek from its confluence with Buttermilk Creek upstream 4.8 km (3.5 mi) to 3.5rm to a series of falls; and the West Fork Buttermilk Creek from its confluence with Buttermilk Creek upstream 14.6 km (9.0 mi) to its headwaters provide spawning and rearing habitat. Reynolds Creek from its confluence with the Twisp River upstream 0.90 km (0.56 mi) to several large falls; North Creek from its confluence with the Twisp River upstream 0.97 km (0.6 mi) to a 8ft barrier falls; War Creek from its confluence with the Twisp River upstream 1.9 km (1.2 mi) to barrier falls; and South Creek from its confluence with the Twisp River upstream 3.3 km (2.0 mi) provide spawning and rearing habitat. Additionally, the lower portions of the mainstem Twisp River provide for connectivity for bull trout to forage and migrate between the Twisp River system and the Methow and Columbia Rivers

(E) The Chewuch River from its confluence with the Methow River upstream 18.6 km (11.6 mi) to Eightmile Creek provides FMO habitat and from that point upstream to a 25 ft barrier falls at 39.0 km (25.2 mi) it provides spawning and rearing habitat. Eightmile Creek from its confluence with the Chewuck River upstream 22.5 km (14.0 mi) to its headwaters and Lake Creek from its confluence with the Chewuch River upstream 13.4 km (8.4 mi) to a barrier falls above Black Lake provide spawning and rearing habitat. Black Lake (23.8 ha (58.8 ac)) provides FMO habitat for adfluvial and allucustrine life histories. Andrews Creek from its confluence with the Chewuch River upstream 0.08 km (0.5 rm) to a 12 ft. tall barrier falls provides spawning and rearing habitat.

(F) Wolf Creek from its confluence with the Methow River upstream 17.1 km (10.6 mi) to a barrier falls and North Fork Wolf Creek from its confluence with Wolf Creek upstream 8.7 km (5.4 mi) provide spawning and rearing habitat.

(G) Goat Creek from its confluence with the Methow River upstream 20.5 km (12.7 mi) to its headwaters provides spawning and rearing habitat.

(H) Early Winters Creek from its confluence with the Methow River upstream 26.5 km (16.5 mi) to its headwaters provides spawning and rearing habitat. A local population of bull trout occurs 12.9 km (8.0 mi) upstream of the falls at State Highway 20; however, a 35.5 cm (14.0 in) bull trout has been observed upstream of the falls. Also, Cedar Creek from its confluence with Early Winters Creek upstream 3.1 km (1.9 mi) to a 40 ft barrier falls and Huckleberry Creek from its confluence with Cedar Creek upstream 7.0 km (4.4 mi) to its headwaters provide spawning and rearing habitat.

(I) The Lost River from its confluence with the Methow River upstream 36.3 km (22.6 mi) to its headwaters provides spawning and rearing habitat. Monument Creek from its confluence with the Lost River upstream 9.3 km (5.8 mi) to its headwaters and Eureka Creek from its confluence with the Lost River upstream 1.7 km (1.0 mi) provide spawning and rearing habitat for the fluvial life history form. Ptarmigan Creek from its confluence with First Hidden Lake upstream 0.80 km (0.5 mi) to a 50ft falls; Diamond Creek from its confluence with the Lost River upstream 0.9 km (0.5 mi); and Drake Creek from its confluence with the Lost River upstream 0.8 km (0.5 mi) provide spawning and rearing habitat for the adfluvial, allucustrine, and local populations that use Cougar Lake, First Hidden, and Middle Hidden Lakes and the upper streams. Cougar Lake (7.6 ha (18.7 ac)), First Hidden Lake (7.3 ha (18.1 ac)), and Middle Hidden Lake (7.7 ha (19.1 ac)) provide FMO habitat for the adfluvial, allucustrine, and resident life history forms. Additionally, the lower portions of the mainstem Lost River provide forage, overwintering, and connectivity between the Lost River system and the Methow and Columbia Rivers.

Table 35. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Upper Columbia River Basins–Methow River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Methow River	Methow River	WA	Methow River from the confluence with the Columbia River to its confluence with the Chewuch River is occupied FMO habitat (Molesworth 1997 p. 1; Proebstel et al. 1998 p. 28; BioAnalysts 2004 p. 47-51; Stevenson et al. 2006 p. 14; Stevenson et al. 2007 p. 11, 15; Nelson et al. 2007 p. 18-21; Stevenson et al. 2009 p. 12; Service 2002a,b (recovery plan and proposed Crit Hab rule).	Methow R. contains essential FMO that facilitates bull trout migration between the Columbia River and its local populations (Gold, Beaver, Twisp, Chewuch, Lake Creek, Wolf, Early Winters, Upper Methow, and Gold) in the Methow Core Area. (See text for Methow River CHSU above)	1198933 480501
Upper Columbia River Basins–Methow River	Methow River	WA	Methow River from the confluence with the Chewuch River upstream 55.5 km (34.5 mi) to the Lost River to the confluence with the Lost River is occupied SR habitat (Molesworth 1997 p. 1; Proebstel et al. 1998 28; BioAnalysts 2004 p. 47-51; Stevenson et al. 2006 p. 14; Stevenson et al. 2007 p. 11, 15; Nelson et al. 2007 p. 18-21; Stevenson et al. 2009 p. 12; Service 2002a,b (recovery plan and proposed Crit Hab rule).	The Methow R. contains essential S/R habitat for the upper Methow River local population and other pops in the Core Area. (See text for Methow River CHSU above)	1198933 480501
Upper Columbia River Basins–Methow River	West Fork Methow River	WA	The upper Methow River turns into the West Fork Methow River at the confluence with the Lost River. The West Fork Methow from the confluence with the Lost River to a barrier falls provides the primary SR habitat for the Upper Methow River population, lower Lost River, Trout, Robinson and Rattlesnake Creeks (Molesworth 1997 p. 1; Proebstel et al. 1998 p. 28; BioAnalysts 2004 p. 47-51; Nelson and Nelle 2007 p 6; Nelson et al. 2007 p. 22, 25-26; USFS in litt. 2008 p. 11; Service 2002a,b (recovery plan and proposed Crit Hab rule)).	The West Fork Methow R. contains essential S/R habitat for the upper Methow River local population and other pops in the Core Area. (See text for Methow River CHSU above)	1205105 486513
Upper Columbia River Basins–Methow River	Lightning Creek	WA	Lightening Creek from its confluence with Beaver Creek upstream to a barrier falls at 0.40 km (0.25 mi) is occupied and provides SR habitat (WDFW 1998, p. 345; Service 2002a, p. 20; USGS 2007a (S10 permit report); USGS Comments; B. Fisher - 2010 Proposed Rule Comments; WDFW 2009 (Distribution Map)).	Lightening Creek contains essential spawning and rearing FMO habitat for the Beaver Creek local population. (See text for Methow River CHSU above)	1199982 484508
Upper Columbia River Basins–Methow River	Blue Buck Creek	WA	Blue Buck Creek from its confluence with Beaver Creek upstream to its headwaters is occupied and provides SR habitat (Molesworth 1997 p. 3; Proebstel et al. 1998 p. 20, 78 – hybrid ebxbull; WDFW 1998, p. 345; Service 2002a, p. 20; Cole et al. 2003 p. 8; USGS 2007a (S10 permit report); WDFW 2009 (Distribution Map)).	Blue Buck Creek contains essential spawning and rearing habitat for the Beaver Creek local population. (See text for Methow River CHSU above)	1200041 484863

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Methow River	Beaver Creek	WA	Beaver Creek from its confluence with the Methow River upstream 20.9 km (13.0 mi) to its confluence with Lightening Creek provides FMO habitat. Habitat connectivity has recently been restored, and currently provides a migratory corridor (Molesworth 1997 p. 3; Proebstel et al. 1998 p. 20, 78 – hybrid ebxbull; WDFW 1998, p. 346; WDFW 2004 p. 349; USFS 2005b; USFS 2008b p. 15; Service 2002a, p. 20; USGS 2007a (S10 permit report); Fisher—2010 (2010 Proposed Rule Comments); WDFW 2009 (Distribution Map); Service 2002a, p. 20).	Beaver Creek is essential FMO for the Beaver Creek local pop, which includes SR habitat in Blue Buck Creek and Lightening Cr, and provides connectivity for future viability. (See text for Methow River CHSU above)	1200653 483267
Upper Columbia River Basins–Methow River	Beaver Creek	WA	Beaver Creek from its confluence with Lightening Creek upstream to a series of falls at 1.6km (1.0 mi) is presumed occupied and provides SR habitat (Molesworth 1997 p. 3; Proebstel et al. 1998 p. 20, 78 – hybrid ebxbull; WDFW 1998, p. 346; WDFW 2004 p. 349; USFS 2005b; USFS 2008b p. 15; Service 2002a, p. 20; USGS 2007a (S10 permit report); Fisher 2010 (2010 Proposed Rule Comments); WDFW 2009 (Distribution Map).	Beaver Creek is essential SR for the Beaver Creek local pop, which includes SR habitat in Blue Buck Creek and Lightening Cr, and provides connectivity for future viability. (See text for Methow River CHSU above)	1200653 483267
Upper Columbia River Basins–Methow River	Gold Creek	WA	Gold Creek from its confluence with the Methow River to the confluence of N. Fork Gold Creek and S. Fork Gold Creek is occupied FMO habitat (Mullan et al. 1992 p. K-413; WDFW 1998 p. 341; Service 2002a, p. 20; USGS 2007a (S10 permit report)).	Gold Creek contains essential FMO habitat for the Gold Creek pop. which has SR in Foggy Dew and Crater Creeks (See text for Methow River CHSU above)	1200941 481881
Upper Columbia River Basins–Methow River	North Fork Gold Creek	WA	North Fork Gold Creek from its confluence with Gold Creek upstream to its headwaters is occupied and provides SR habitat (Mullan et al. 1992 p. D-232; WDFW 1998, p. 341; USFS 2005b; USGS *in litt.* 2007b (xls data); USGS 2007a (S10 permit report)).	N Fork Gold Creek contains essential spawning and rearing habitat for the Gold Cr pop. and is likely used by bull trout from N. Fork, Foggy Dew, and Crater Creeks (See text for Methow River CHSU above)	1201152 481853
Upper Columbia River Basins–Methow River	Twisp River	WA	Twisp River from the confluence with the Methow River upstream to 47.5 km (29.5mi) (~1/4 mile above Roads End Campground) to 15ft high falls is occupied and provides SR habitat (Proebstel et al. 1998 p. 21; WDFW 1998, p. 349; Watershed Sciences 2002a p. 9-11; BioAnalysts 2004 p. 47-50; Nelson 2004 p. 6-9; USFS 2008b p. 8; Nelson et al. 2007 p. 20; Nelson and Nelle 2007 p. 6; Service 2002a, p. 20).	Twisp River contains essential spawning and rearing habitat for the Twisp local population and is used by bull trout that spawn and rear in the mainstem and several tributaries (Little Bridge, Buttermilk, Reynolds, War, North, and South Creeks). (See text for Methow River CHSU above)	1201177 483686

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Methow River	Lake Creek	WA	Lake Creek from its confluence with the Chewuch River upstream to a barrier falls above Black Lake is occupied and provides SR habitat (Proebstel et al. 1998 p. 32, 77; WDFW 1998, p. 365; Watershed Sciences 2002a, p. 14; USFS 2005b.xlsx 2004 observations by USFS snorkel; USFS 2008b p. 13; Service 2002a, p. 22; Service *in litt* 2009b (Genetic surveys)).	Lake Creek contains essential spawning and rearing habitat for potentially both Lake Creek and the Chewuch populations. It is one of two allucustrine populations in the Upper Columbia CHU (See text for Methow River CHSU above)	1201369 487589
Upper Columbia River Basins–Methow River	Eightmile Creek	WA	Eightmile Creek from its confluence with the Chewuch R upstream to its headwaters provides occupied SR habitat. Adults were observed spawning in 2009 near the mouth and subadults were observed upstream near appprox 7.0 miles (Watershed Sciences 2002a, p. 14; USFS 2005b.xlsx 2004 observations 24" bull by USFS snorkel; USFS 2009d (draft) p. 14; Humling 2009 p. 1; Service 2002a, p. 23; NMFS 2007 p. 129; WDFW 2009 (Distribution Map)).	Eightmile Creek contains essential spawning and rearing habitat for the Chewuch population. (See text for Methow River CHSU above)	1201623 486035
Upper Columbia River Basins–Methow River	Chewuch River	WA	Chewuch River from its confluence with the Methow River upstream to Eightmile Creek is occupied and provides FMO habitat (Watershed Sciences 2002a, p. 12-14; USFS 2005b.xlsx 2000 and 2002 snorkel surveys; Nelson et al. 2007 p32; USFS 2008b p. 14; Service 2002a, p. 22).	Chewuch River contains essential FMO habitat for the Chewuch and Lake Creek populations. (See text for Methow River CHSU above)	1201819 484759
Upper Columbia River Basins–Methow River	Chewuch River	WA	Chewuch River from its confluence with Eightmile Creek upstream 36.8rm to a 25 ft barrier falls is occupied and provides SR habitat (Watershed Sciences 2002a, p. 12-14; USFS 2005b.xlsx 2000 and 2002 snorkel surveys; Nelson et al. 2007 p32; USFS 2008b p. 14; Service 2002a, p. 22).	Chewuch River contains essential spawning and rearing habitat for the Chewuch population. (See text for Methow River CHSU above)	1201819 484759
Upper Columbia River Basins–Methow River	Foggy Dew Creek	WA	Foggy Dew Creek from its confluence with the N. Fork Gold Creek upstream 6.3rm to a substantial falls is occupied and provides SR habitat (WDFW 1998, p. 341; USFS 2005b; USGS *in litt*. 2007b; USFS 2009d (draft) p. 5, 15; Stevenson et al. 2008 p. 20; Service 2002a, p. 20; USGS 2007a (S10 permit report); Fisher 2010 (2010-Proposed Rule Comments).	Foggy Dew Creek contains essential spawning and rearing habitat along with N. Fork Gold and Crater Creeks for the Gold Cr local population (See text for Methow River CHSU above)	1201887 482046
Upper Columbia River Basins–Methow River	Crater Creek	WA	Crater Creek from its confluence with N. Fork Gold Creek upstream 2.9rm to a 40 ft barrier falls is occupied and provides SR habitat (Mullan et al. 1992 p. D-232; Molesworth 1997 p. 3; WDFW 1998, p. 341; USFS 2009d (draft) p. 15; Service 2002a, p. 20; USGS 2007a (S10 permit report), Fisher 2010 (2010-Proposed Rule Comments).	Crater Creek contains essential spawning and rearing habitat along with N. Fork Gold and Foggy Dew Creeks for the Gold Cr local population (See text for Methow River CHSU above)	1202083 482144

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Methow River	Wolf Creek	WA	Wolf Creek from its confluence with the Methow River upstream to a barrier falls is occupied and provides SR habitat (Mullan et al. 1992 p. 52, D-234, K-413; Molesworth 1997 p. 2; WDFW 1998, p. 369; Nelson and Nelle 2007 p. 6; Nelson et al. 2007 p. 22; USFS 2008b p. 5, 14; Collins et al. 2008 p. 11; Service 2002a, p. 22; Service in litt. 2009b (Genetic Surveys)).	Wolf Creek contains most of the essential spawning and rearing habitat for the Wolf Creek local population (See text for Methow River CHSU above)	1202305 484907
Upper Columbia River Basins–Methow River	Little Bridge Creek	WA	Little Bridge Creek from its confluence to its headwaters is occupied and provides SR habitat for the Twisp River populations (Molesworth 1997 p. 3; WDFW 1998, p. 349; USFS 2005b.xlsx 1992 obs by USFS electrofishing; Service 2002a, p. 20; Service in litt. 2008j (M. Nelson report); USFS 2003a (Stream Survey Report).	Little Bridge Creek provides essential spawning and rearing habitat for the Twisp River local population and is recently reconnected to the Twisp River with a new diversion Structure (See text for Methow River CHSU above)	1202851 483790
Upper Columbia River Basins–Methow River	East Fork Buttermilk Creek	WA	East Fork of Buttermilk Creek from its confluence with Buttermilk Creek upstream 3.5rm to a series of falls is occupied and provides SR habitat (Mullan et al. 1992 p51, D-233, K-413; WDFW 1998, p. 357; USFS 2008b p. 10; B Kelly Ringel pers comm. 2001, 2002 – (PUD tagged BT in E. Fork Buttermilk); Service 2002a, p. 21; Service 2002a, p. 71302).	E. Fork Buttermilk Creek provides essential spawning and rearing habitat for the Twisp R local population. (See text for Methow River CHSU above)	1203022 483396
Upper Columbia River Basins–Methow River	West Fork Buttermilk Creek	WA	West Fork Buttermilk Creek from its confluence with Buttermilk Creek upstream 14.6 km (9.0 mi) to its headwaters is occupied and provides SR habitat (Mullan et al. 1992 p50, D-233; Proebstel et al. 1998 p. 23, 77; WDFW 1998, p. 357; Nelson 2004 p. 13; USFS 2008b p. 10; Service 2002a, p. 21; Service 2002a, p. 71302).	W. Fork Buttermilk Creek provides essential spawning and rearing habitat for the Twisp R local population. (See text for Methow River CHSU above)	1203022 483406
Upper Columbia River Basins–Methow River	Buttermilk Creek	WA	Buttermilk Creek from its confluence with the Twisp River upstream 4.1 km (2.5 mi) to the East and West Forks Buttermilk Creek is occupied and provides SR habitat (WDFW 1998, p. 357; Watershed Sciences 2002a p. 11; BioAnalysts 2004 p. 49; USFS 2008b p. 9-10; Service 2002a, p. 21; Service 2002a, p. 71302).	Buttermilk Creek provides essential spawning and rearing habitat for the Twisp R local population. (See text for Methow River CHSU above)	1203382 483627
Upper Columbia River Basins–Methow River	North Fork Wolf Creek	WA	North Fork Wolf Creek from its confluence with Wolf Creek upstream to its headwaters is occupied and provides SR habitat (Mullan et al. 1992 p. D-234; WDFW 1998, p. 369; Service 2002a, p. 22; Service in litt. 2009b (Genetic Surveys).	N Fork Wolf Creek contains essential spawning and rearing habitat for the Wolf Creek local population (See text for Methow River CHSU above)	1203438 484861

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Methow River	Goat Creek	WA	Goat Creek from its confluence with the Methow River upstream to its headwater is occupied and provides SR habitat (Mullan et al. 1992 p. 52, D-234, K-415; Molesworth 1997 p. 2; Proebstel et al. 1998 p. 35, 76, 77; WDFW 1998, p. 373; Adelsberger and Nelson 2009 p. 2; Service 2002a, p. 23; Service *in litt.*2009b (Genetic surveys).	Goat Creek provides essential spawning and rearing habitat for the Goat Creek local population. (See text for Methow River CHSU above)	1203780 485742
Upper Columbia River Basins–Methow River	War Creek	WA	War Creek from its confluence with the Twisp River upstream 1.9 km (1.2 mi) to barrier falls is presumed occupied and provides SR habitat (Mullan et al. 1992 p. 51, D-233; USFS 2005b onf_point_05.xlsx - 2003 USFS snorkel surveys 9 bull trout observed. USFS 2008b Survey Report, WDFW 2009 (Distribution Map).	War Creek provides essential spawning and rearing habitat for the Twisp R local population. (See text for Methow River CHSU above)	1203949 483614
Upper Columbia River Basins–Methow River	Diamond Creek	WA	Diamond Creek from its confluence with the Lost River upstream 0.9 km (0.5 mi) provides SR habitat for one of three allucustrine populations in the Upper Columbia CHU, which use Cougar Lake, First Hidden, and Middle Hidden Lakes as FMO habitat (WDFW 1998 p. 385, 388; Service *in litt.*2009b (Genetics Surveys); John Crandall, pers com 2010; Bob Jateff, pers comm. WDFW 2009).	Diamond Creek provides essential spawning and rearing habitat for the upper Lost R local population. (See text for Methow River CHSU above)	1204208 488495
Upper Columbia River Basins–Methow River	Early Winters Creek	WA	Early Winters Creek from its confluence with the Methow River upstream to its headwaters is occupied and provides SR habitat (Mullan et al. 1992 p52; Molesworth 1997 p. 2; Proebstel et al. 1998 p. 36, 77; WDFW 1998, p. 377; USFS 2009d (draft p. 12); Service 2002a, p. 24; Service *in litt.*2009b (Genetic Surveys)).	Early Winters Creek provides essential spawning and rearing habitat for the Early Winters local population which has a migratory component and a resident component upstream of falls near rkm 13 (See text for Methow River CHSU above)	1204364 486012
Upper Columbia River Basins–Methow River	Monument Creek	WA	Monument Creek from its confluence with the lower Lost River upstream to its headwaters is occupied and provides SR habitat for the fluvial life history form (Mullan et al. 1992 p. 52, D-235, K-413; Proebstel et al. 1998 p. 39; WDFW 1998 p. 389; Service 2000 (redd surveys); Service 2002a, p. 71302).	Monument Creek is essential spawning and rearing habitat for the Lost R and Upper Methow local populations. It is necessary habitat for the lower Lost R due to subsurface flow just upstream of Monument Creek in the Lost R. (See text for Methow River CHSU above)	1204478 487325
Upper Columbia River Basins–Methow River	Cedar Creek	WA	Cedar Creek from its confluence with Early Winters Creek upstream 3.1 km (1.9 mi) to a 40 ft barrier falls is occupied and provides SR habitat (Mullan et al. 1992 p52, D-234, K-414; WDFW 1998, p. 381; MCRFRO 2008 p. 14; USFS 2009d (draft p. 4, 12); Service 2002a, p. 24).	Cedar Creek provides essential spawning and rearing habitat for the Early Winters local population. (See text for Methow River CHSU above)	1204700 485890

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Methow River	Huckleberry Creek	WA	Huckleberry Creek from its confluence with Cedar Creek upstream 7.0 km (4.4 mi) to its headwaters is presumed occupied and provides SR habitat in 1993 USFS observed bull trout during snorkel surveys (USFS 2005b onf_point_05.xlsx; USFS in litt 2009d draft p. 12; Service 2002a, p. 24; WDFW 2009 (Distribution Maps)).	Huckleberry Creek provides essential spawning and rearing habitat for the Early Winters local population. (See text for Methow River CHSU above)	1204718 485693
Upper Columbia River Basins–Methow River	Reynolds Creek	WA	Reynolds Creek from its confluence with the Twisp River upstream 0.90 km (0.56 mi) to several large falls to a barrier falls is occupied and provides SR habitat (Mullan et al. 1992 p. D-233; Proebstel et al. 1998 p. 26; WDFW 1998, p. 361; USFS 2005b onf_point_05.xlsx - *1994 and 2001 USFS S*urveys 29 and 27 saco observed; USFS 2008b p. 9; Service 2002a, p. 22; WDFW 2009 (Distribution Map)).	Reynolds Creek provides essential spawning and rearing habitat for the Twisp R local population. (See text for Methow River CHSU above)	1204777 484060
Upper Columbia River Basins–Methow River	Ptarmigan Creek	WA	Ptarmigan Creek from its confluence with First Hidden Lake upstream 0.80 km (0.5 mi) to a 50ft falls provides SR habitat for the adfluvial populations that use Cougar Lake, First Hidden, Middle Hidden Lakes, and the upper streams (WDFW 1998 p. 397-400; Molesworth 1997 p. 2; WDFW 2009 (Maps)).	Ptarmigan Creek provides essential spawning and rearing habitat for the upper portion of the Lost R local population located above a partial barrier (subsurface reach) at certain times of the year. (See text for Methow River CHSU above)	1204811 488909
Upper Columbia River Basins–Methow River	Eureka Creek	WA	Eureka Creek from its confluence with the lower Lost River upstream 1.7 km (1.0 mi) is occupied and provides SR habitat for the fluvial life history form (WDFW 1998, p. 389; USFS 2005b; Service 2002a, p. 71302).	Eureka Creek is essential spawning and rearing habitat for the Lost R and Upper Methow local populations. It is necessary habitat for the lower Lost R due to subsurface flow just upstream of Monument Cr in the Lost R. (See text for Methow River CHSU above)	1204908 487000
Upper Columbia River Basins–Methow River		WA	The Lost River from its confluence with the Methow River upstream to its headwaters provides SR habitat USFS found bull trout during 2000 Lost River snorkel survey. (Mullan et al. 1992 p. 52; Proebstel et al. 1998 p. 39; WDFW 1998 p. 387; Molesworth 1997 p. 2; Nelson and Nelle 2007 p. 6; Nelson et al. 2007 p. 16; USFS in litt. 2009d draft p. 5, 15; USFS 2005b onf_point_05.xlsx; Service 2002a, p. 24, Service 2007 (Genetic Surveys)).	Lost River is essential spawning and rearing habitat for the Upper Methow local population in the lower river and for the Lost River local population in the upper river. Both areas are necessary and populations are separate at certain times of the year due to subsurface flows just upstream of Monument Cr near rkm 12.5 in the Lost R. (See text for Methow River CHSU above)	1205105 486503
Upper Columbia River Basins–Methow River	South Creek	WA	South Creek from its confluence with the Twisp River upstream 3.3 km (2.0 mi) is occupied and provides SR habitat (Mullan et al. 1992 p. D-233, K-414; Proebstel et al. 1998 p. 77; USFS 2005b - 2001 USFS saw bulls in South Creek during snorkel survey; USFS 2008b Survey Report, WDFW 2009 (Distribution Map)).	South Creek provides essential spawning and rearing habitat for the Twisp R local population. (See text for Methow River CHSU above).	1205277 484377

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Methow River	Robinson Creek	WA	Robinson Creek from its confluence with the Methow River upstream 0.6 km (1.0 mi) to 10ft high falls is occupied and provides SR habitat (USFS 2005b, 1994, and 2003, 4 obs; MCRFRO 2007 p. 16- 1 obs; USFS 2009d (draft p. 12).; Service 2002a, p. 23; Service 2002a, p. 71301).	Robinson Creek contains essential spawning and rearing habitat for the upper Methow local population. (See text for Methow River CHSU above)	1205369 486595
Upper Columbia River Basins–Methow River	North Creek	WA	North Creek from its confluence with the Twisp River upstream to 0.97km (0.6mi) to a 8ft falls is occupied and provides SR habitat (USFS 2005b; USFS 2008b p. 9, up to 63 redds annually; Service in litt. 2008i (Genetics Surveys); WDFW 2009 (Distribution Map).	North Creek provides essential spawning and rearing habitat for the Twisp R local population. (See text for Methow River CHSU above)	1205620 484544
Upper Columbia River Basins–Methow River	Rattlesnake Creek	WA	Rattlesnake Creek from its confluence with the Methow River upstream to a barrier falls is occupied and provides SR habitat (Service 2002a, p. 23; Service 2002a, p. 71301; USFS 2008b (Spawning Surveys).	Rattlenake Creek contains essential spawning and rearing habitat for the Upper Methow local population. (See text for Methow River CHSU above)	1205643 486486
Upper Columbia River Basins–Methow River	Trout Creek	WA	Trout Creek from its confluence with the Methow River upstream to its headwaters is occupied and provide SR habitat (WDFW 1998 p. 405; USFS 2005b; USFS 2008b p. 11; Service 2002a, p. 23; Service 2002a, p. 71301).	Trout Creek contains essential spawning and rearing habitat for the Upper Methow local population. (See text for Methow River CHSU above)	1205982 486398
Upper Columbia River Basins–Methow River	Drake Creek	WA	Drake Creek from its confluence with the Lost River upstream 0.8 km (0.5 mi) provides SR habitat for the allucustrine populations that use Cougar Lake, First Hidden, and Middle Hidden Lakes. (WDFW 1998 p. 388; B. Jateff, pers. comm., 2009).	Drake Creek provides essential spawning and rearing habitat for the upper Lost River local population. (See text for Methow River CHSU above)	1203946 487816
Upper Columbia River Basins–Methow River	Andrews Creek	WA	Andrews Creek from its confluence with the Chewuch River upstream 0.5 rm to a 12 ft. barrier falls is occupied spawning and rearing habitat. (USFS 2006a (.xlsx); WDFW 2009 (Distribution Map); Kelly Ringel *in litt.* 2010).	Andrews Creek provides essential spawning and rearing habitat for the Chewuch River local population. (See text for Methow River CHSU above)	1201071 487819

10.2. Chelan River Critical Habitat Subunit

The Chelan River CHSU supports fluvial life history forms of bull trout and includes the mainstem Chelan River from its confluence with the Columbia River to the dam at Lake Chelan. The Chelan drainage is located on the eastern slopes of the Cascade Range in north-central Washington and drains east into the Columbia River. The Chelan River supports populations in the Upper Columbia River CHU that use the mainstem Columbia River as FMO; these populations of bull trout rely heavily on migratory corridors to and from the Columbia River. A total of approximately 0.82 km (0.51 mi) of streams are proposed for designation as critical habitat and provide cold water refuge and FMO habitat.

The following water bodies are included in this CHSU (Table 36):

(A) The Chelan River from its confluence with the Columbia River upstream approximately 0.82 km (0.51 mi) to a series of barrier cascades provides important water quality and FMO habitat.

Table 36. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Upper Columbia River Basins–Chelan River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Chelan River	Chelan River	WA	The Chelan River from its confluence with the Columbia River upstream approximately 0.82 km (0.51 mi) to a series of barrier cascades in a narrow canyon reach provides important water quality and FMO habitat. (Connor *in litt.*2001; Connor 1999 (R2 Consultants Technical Memo); Chelan PUD 2006 (telemetry report), Service 2006b (Chelan FERC Relicensing BO); Service 2009c (Rocky Reach FERC relicensing BO); Hemstrom 2010 (Chelan PUD 2010 Proposed Rule Comments).	Chelan River contains essential FMO habitat for all pops using the Col. R. from at least 3 Core Areas (i.e., Methow, Entiat, and Wentachee). (See text for Methow River CHSU above)	1199789 478034

10.3. Entiat River Critical Habitat Subunit

The Entiat River CHSU supports populations of fluvial and resident life history forms with the fluvial form relying year round on the mainstem Columbia River for FMO habitat. It includes the mainstem Entiat River and tributaries from its confluence with the Columbia River upstream to its headwaters at the crest of the Cascade Range. The Entiat drainage flows east towards the Columbia Plateau and drains into the Columbia River near the city of Entiat, Washington. A total of 90.9 km (56.5 mi) of streams are proposed for designation as critical habitat and provide for spawning and rearing and FMO habitat.

The following water bodies are included in this CHSU (Table 37)

(A) The Entiat River from its confluence with the Columbia River upstream 25.7 km (16.0 mi) provides FMO, and from that point upstream 21.3 km (13.2 mi) to Entiat Falls provides spawning and rearing habitat. Stormy Creek from its confluence with the Entiat River at upstream 7.8 km (4.8 mi) provides FMO habitat.

(B) The Mad River from its confluence with the Entiat River upstream 31.5 km (19.6 mi) to a barrier cascades provides spawning and rearing habitat. The Mad River provides the majority of the known spawning and rearing habitat in the Entiat CHSU. Tillicum Creek from its confluence with the Mad River upstream 4.7 km (2.9 mi) to a barrier falls provides spawning and rearing habitat.

Table 37. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Upper Columbia River Basins–Entiat River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Entiat River	Entiat River	WA	Entiat River from its confluence with the Columbia River upstream 25.7 km (16.0 mi) to a barrier falls is occupied and provides FMO habitat for the CHSU (Brown 1992 p. 92; WDFW 1998, p. 331; Watershed Sciences 2002a, p. 19-21; BioAnalysts 2004 p. 46, 49-51; Archibald and Johnson 2007 p3; Nelson and Nelle 2008 p22-76; USFS 2008a; Kelly Ringel 2010a p. 8; Service 2002a,b (recovery plan and proposed Crit Hab rule).	Entiat R. contains FMO which is essential to facilitate bull trout migration between the Columbia River and Entiat Core Area which has only two local populations (Mad and upper Entiat Rivers). The Entiat fish use the Columbia River as their primary FMO habitat. (See text for Entiat River CHSU above).	1202169 476606
Upper Columbia River Basins–Entiat River	Entiat River	WA	Entiat River is occupied and provides SR for one of two local populations in the Entiat Core Area (Brown 1992 p. 92; WDFW 1998, p. 331; Watershed Sciences 2002a, p. 19-21; BioAnalysts 2004 p. 46, 49-51; Archibald and Johnson 2007 p3; Nelson and Nelle 2008 p22-76; USFS 2008a; Kelly Ringel 2010a p. 8; Service 2002a,b (recovery plan and proposed Crit Hab rule).	Entiat R. provides spawning and rearing areas and is essential for maintaining the two local populations in the Entiat Core Area (See text for Entiat River CHSU above).	1202169 476606
Upper Columbia River Basins–Entiat River	Mad River	WA	Mad River from its confluence with the Entiat River upstream to a barrier cascades is occupied and provides SR habitat (Brown 1992 p. 93; Proebstel et al. 1998 p. 41-42; WDFW 1998, p. 335; Watershed Sciences 2002a, p. 22-23; BioAnalysts 2004 p. 46, 49-51; Archibald and Johnson 2007 p3; USFS 2008a; Nelson and Nelle 2008 p22-76; Collins et al. 2008 p. 11; Service 2002a, p. 19).	Mad River is one of two local populations in the Entiat Core Area and provides spawning and rearing areas. Because there are only two local populations in the Entiat Core Area, maintenance of habitat and of both populations is important for persistence of bull trout in this core area. (See text for Entiat River CHSU above).	1203622 477359
Upper Columbia River Basins–Entiat River	Tillicum Creek	WA	Tillicum Creek from its confluence with the Mad River upstream 4.7 km (2.9 mi) to a barrier falls provides SR habitat (Brown 1992 p. 62, 79, 93; Watershed Sciences 2002a, p. 23; USFS 2006a wnf_point_stream.xlsx –; Collins et al. 2008 p. 11; Service 2002a, p. 19, Service 2002a, p. 71301; WDFW 2009 (Distribution Map)).	Tillicum Creek provides essential spawning and rearing habitat for the two local populations (Entiat and Mad Rivers) because SR habitat is limited in the Entiat Core Area. (See text for Entiat River CHSU above).	1203928 477475
Upper Columbia River Basins–Entiat River	Stormy Creek	WA	Stormy Creek from its confluence with the Entiat River upstream 7.8 km (4.8 mi) is occupied and provides FMO habitat (Watershed Sciences 2002a, p. 21; USFS 2006b (Stormy Cr Culvert Replacement Project Report); WDFW 2009 (Distribution Map)).	Stormy Creek provides essential spawning and rearing habitat for the two local populations (Entiat and Mad Rivers) because SR habitat is limited in the Entiat Core Area. (See text for Entiat River CHSU above).	1204208 478221

10.4. Wenatchee River Critical Habitat Subunit

This CHSU supports one of the largest populations of bull trout and some of the most connected habitat in the Upper Columbia River Basins CHU. It includes the mainstem Wenatchee River from its confluence with the Columbia River and tributaries up to their headwaters at the crest of the Cascade Range. The Wenatchee drainage flows east and drains into the Columba River at Wenatchee, Washington. It contains adfluvial, fluvial, and resident life history forms and has one of three allucustrine populations in this CHU. Bull trout in this CHU use multiple tributaries to spawn and Lake Wenatchee, multiple tributaries, and the Columbia River as FMO. One of the largest populations, the Chiwawa River) has individuals that migrate upstream to the Lake and back downstream to spawn. Populations of bull trout in this CHSU rely heavily on migratory habitat in Lake Wenatchee and the connectivity to and from the Columbia River for forage and overwintering. A total of 424.9 km (264.0 mi) of streams and 987.6 ha (2,438.4 ac) of surface area from one lake are proposed for designation and provide for spawning and rearing and FMO habitat.

The following water bodies are included in this CHSU (Table 38):

(A) Wenatchee River from its confluence with the Columbia River upstream 86.9 km (54.0 mi) to Lake Wenatchee provides FMO habitat.

(B) Lake Wenatchee (987.6 ha (2,438.4 ac) provides FMO habitat.

(C) Peshastin Creek upstream 17.3 km (10.8 mi) to its confluence with Etienne Creek (previously named Negro Creek) provides spawning and rearing habitat. Ingalls Creek from its confluence with Peshastin Creek upstream 16.3 km (10.1 mi) to a barrier falls and Etienne Creek upstream 13.3 km (8.3 mi) provides spawning and rearing habitat.

(D) Icicle Creek from its confluence with the Wenatchee River upstream 10.9 km (6.7 mi) provides FMO habitat for migratory bull trout. Spawning and rearing habitat occurs from this point upstream 39.4 km (24.5 mi) to a falls just upstream of Trapper Creek. Jack Creek from its confluence with Icicle Creek upstream 11.4 km (7.1 mi) to a barrier falls; French Creek from its confluence with Icicle Creek upstream 8.9 km (5.5 mi) to a barrier falls; and Leland Creek from its confluence with Icicle Creek upstream 8.0 km (5.0 mi) provide spawning and rearing habitat.

(E) Chiwaukum Creek from its confluence with the Wenatchee River upstream 10.5 km (6.5 mi) to a narrow bedrock canyon and series of falls provides spawning and rearing habitat.

(F) Chiwawa River from its confluence with the Wenatchee River upstream 56.0 km (34.8 mi) to a barrier falls provides spawning and rearing habitat for the largest bull trout population in the CHU. Besides supporting a fluvial population, which migrates to the Columbia River, the Chiwawa River supports the only adfluvial and allucustrine population in the Wenatchee CHSU where they migrate between Lake Wenatchee and the Chiwawa River to spawn. Chikamin Creek from its confluence with the Chiwawa River upstream 13.3 km (8.3 mi) to its headwaters; Rock Creek from its confluence with the Chiwawa River upstream 9.3 km (5.8 mi) to a barrier falls; Phelps Creek from its confluence with the Chiwawa River upstream 1.6 km (1.0 mi) to a barrier falls; James Creek from its confluence with the Chiwawa River upstream 0.4 km (0.3 mi) to a gradient barrier; Alpine Creek from its confluence with the Chiwawa River upstream 0.2 km (0.1 mi) to a gradient barrier; and Buck Creek from its confluence with the Chiwawa River upstream 0.6 km (0.4 mi) to a barrier falls provide spawning and rearing habitat. Alder Creek

from its confluence with the Chiwawa River upstream 9.3 km (5.8 mi) likely provides FMO habitat.

(G) Nason Creek from its confluence with the Wenatchee River upstream 35.0 km (21.7 mi) to a barrier falls and Mill Creek from its confluence with Nason Creek upstream 1.0 km (0.6 mi) to barrier falls provide spawning and rearing habitat. Henry Creek from its confluence with Nason Creek upstream 1.6 km (1.0 mi) provides FMO habitat.

(H) Little Wenatchee River from its mouth at the upper end of Lake Wenatchee upstream 12.0 km (7.5 mi) to a cascades falls provides spawning and rearing habitat. The Little Wenatchee River also provides valuable foraging habitat due to the presence of spawning sockeye salmon (*Oncorhynchus nerka*) and their progeny. Habitat from the falls upstream 14.1 km (8.8 mi) and the Little Wenatchee River tributary Rainy Creek from its mouth upstream 12.0 km (7.4 mi) provide spawning and rearing for the resident life history form.

(I) White River from its mouth at the upper end of Lake Wenatchee upstream 25.5 km (15.9 mi) to a barrier falls; Canyon Creek from its confluence with the White River upstream 6.3 km (3.9 mi) to its headwaters; the Napeequa River from its confluence with the White River upstream 2.7 km (1.7 mi) to a 15 ft barrier falls; and Panther Creek from its confluence with the White River upstream 1.1 km (0.7 mi) to a barrier falls provide spawning and rearing habitat. The White River mainstem and the Napeequa River also provide valuable foraging habitat due to the presence of spawning sockeye salmon and their progeny.

Table 38. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Upper Columbia River Basins–Wenatchee River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Wenatchee River	Wenatchee River	WA	The Wenatchee River is occupied and provides FMO habitat. Populations rely heavily on the connectivity to the mainstem, Lake Wenatchee, and Columbia River (Watershed Sciences 2002c p. 31-32; Watershed Sciences 2002c p. 6-7; BioAnalysts 2004 p. 44-45, 49-51; Stevenson et al. 2006 p. 13; Stevenson et al. 2008 p. 13; Kelly Ringel and De La Vergne 2010 p. 13-22, 27-28, 67-71; Service, 2002a, p. 71300); Service 2009b p42-74.	The Wenatchee River contains essential FMO for all populations in the core area to support multiple life histories. Bull trout often spend extended time in the river presumably for foraging and refuge. It is used heavily and is a key habitat essential to connecting local population to each other and the Columbia River. (See text for Wenatchee River CHSU above)	1203156 474560
Upper Columbia River Basins–Wenatchee River	Peshastin Creek	WA	Peshastin Creek upstream to its confluence with Etienne Creek (previously known as Negro Creek) is occupied and provides FMO habitat (Brown 1992 p. 94; Cooper and Mallas 2004 p. 15; BioAnalysts 2004 p. 51; MCRFRO 2006 p4; Stevenson et al. 2006 p. 13; Stevenson et al. 2007 p. 14; Stevenson et al. 2008 p. 20, 22; Service 2002a, p. 71300).	Peshastin Creek contains essential FMO habitat for the Peshastin local population. (See text for Wenatchee River CHSU above)	1205732 475578
Upper Columbia River Basins–Wenatchee River	Chiwawa River	WA	Chiwawa River from its confluence with the Wenatchee River to a barrier falls is occupied and provides SR habitat. This is the largest population in the Upper Col R Basin CHU and it is one of three allucustine populations (Brown 1992 p. 91-92; WDFW 1998, p. 285; Watershed Sciences 2002c, p. 28-30; BioAnalysts 2004 p. 49, 51; Miller 2008 p. 7, 17, 45; Raekes 2008, p. 7; Hillman 2009 p. 7-8, 20, 29-32; Kelly Ringel and De La Vergne 2010 p. 13-22, 63, 67; Service 2002a, p. 71300).	Chiwawa River contains essential spawning and rearing habitat for the Chiwawa local population. It contains some of the most uniquely complex overwintering areas in the CHU and the population exhibits some of the most diverse movements including allucustrine, fluvial, and adfluvial in the Wenatchee CHSU. It is one of three allucustrine populations in the Upper Columbia CHU. (See text for Wenatchee River CHSU above)	1206585 477882
Upper Columbia River Basins–Wenatchee River	Ingalls Creek	WA	Ingalls Creek from its confluence with Peshastin Creek upstream to a barrier falls is occupied and provides SR habitat (Brown 1992 p. 94; Kelly Ringel 1997 p. 14; WDFW 1998, p. 285; USFS 2001c p. 8; MCRFRO 2006 p4; Stevenson et al. 2007 p. 14; Service 2008l p. 3; Service 2002a, p. 71300; Service 2007 - Genetic Surveys)).	Ingalls Creek contains the majority of essential spawning and rearing habitat for the Peshastin local population. (See text for Wenatchee River CHSU above)	1206599 474630

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Wenatchee River	Etienne Creek	WA	Etienne Creek (previously known as Negro Creek) is occupied and provides SR habitat. Bull trout were seen in 2005 and 2007 snorkels and an adult tracked in the stream in 2010 (Service, 2002a, p. 71300; USFS 2005b; USFS 2006a (database for location information from Genetic samples collected); USFS 2010a (database for ICEMP.xlsx).	Etienne Creek (previously known as Negro Creek) contains essential spawning and rearing habitat for the Peshastin local population. (See text for Wenatchee River CHSU above)	1206616 474429
Upper Columbia River Basins–Wenatchee River	Alder Creek	WA	Alder Creek from its confluence with the Chiwawa River upstream 9.3 km (5.8 mi) likely provides SR habitat for the Chiwawa populations (Kelly Ringel 2007b p. 2; Hillman 2009 p29; USFS 2006c (Culvert Replacement Project Report – bull trout found during project)).	Alder Creek contains spawning and rearing habitat for the Chiwawa local population. (See text for Wenatchee River CHSU above)	1206645 478449
Upper Columbia River Basins–Wenatchee River	Icicle Creek	WA	Icicle Creek from its confluence with the Wenatchee River upstream 10.9 km (6.7 mi) is occupied and provides FMO habitat for migratory bull trout (WDFW 1998, p. 289; Cappellini 2001 p. 12; Watershed Sciences 2002c, p. 8-10; BioAnalysts 2004 p. 49; Stevenson et al. 2006 p. 13, 22; Stevenson et al. 2007 p. 14; Service 2008l p. 3, 9; Nelson et al. 2009 p. 15; Kelly Ringel and De La Vergne 2010 p. 13, 18-19, 70; USFS *in litt.* 2001c; Service 2002a, p. 71300; Service 2008b (Leavenworth National Fish Hatchery BO)).	Lower Icicle Creek contains essential FMO and rearing habitat for fluvial populations in the lower Wenatchee and potentially the Entiat core area. Radio-tagged bull trout from the Entiat Core Area have been located in the lower Icicle River. Cold water released from high mountain lakes in late summer and wells used by Leavenworth NFH reduce stream temperatures in the lower river. This area is currently used by subadult, adult, and some juvenile bull trout. (See text for Wenatchee River CHSU above)	1206661 475803
Upper Columbia River Basins–Wenatchee River	Icicle Creek	WA	Icicle Creek from 10.9 km (6.7 mi) upstream to a falls just upstream of Trapper Creek is occupied and provides SR habitat for Icicle populations (Kelly Ringel 1997 p. 9; WDFW 1998, p. 289; Watershed Sciences 2002c, p. 8-10; Service 2005b p. 4; Kelly Ringel 2007a p. 9-10; WFC 2007 p.2; Service 2008l p. 3, 9; WFC 2009 p. 1; Nelson et al. 2009 p. 15; Service 2002a, p. 71300; Service 2008b (Leavenworth National Fish Hatchery BO)).	Icicle Creek contains essential spawning and rearing habitat for the Icicle local populations, which supports resident and migratory populations in the lower Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1206661 475803
Upper Columbia River Basins–Wenatchee River	Nason Creek	WA	Nason Creek from its confluence with the Wenatchee River upstream to a barrier falls is occupied and provides SR habitat for the Nason Creek population (Brown 1992 p. 90; WDFW 1998, p. 313; Watershed Sciences 2002c, p. 35-37; Service 2006c (Mill Creek Culvert Replacement BO); Service 2008l p. 3; Collins et al. 2008 p. 36; USFS 2010a.xlsx 2006 and 2008 data; Kelly Ringel and De La Vergne 2010 p. 13-22, 66; Service 2002a, p. 71300).	Nason Creek contains essential spawning and rearing habitat for the Nason local population which supports fluvial/adfluvial populations in the Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1207148 478095

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Wenatchee River	White River	WA	White River from its mouth at Lake Wenatchee upstream to a barrier falls is occupied and provides SR habitat (WDFW 1998, p. 321; Kelly Ringel and De La Vergne 2000 p2, 2001 p3; Kelly Ringel 2010a p. 4; Kelly Ringel 2010b p. 4; Kelly Ringel and De La Vergne 2010 p. 13-22, 64; Service 2002a, p.15; Service 2009b (Genetic Surveys)).	White R. contains essential spawning and rearing habitat for the White River adfluvial local population. It is also foraging habitat for other populations using Lake Wenatchee and is one of two sockeye salmon spawning tributaries to Lake Wenatchee that likely serves as a primary source for prey. (See text for Wenatchee River CHSU above)	1207148 478105
Upper Columbia River Basins–Wenatchee River	Chiwaukum Creek	WA	Chiwaukum Creek from its confluence with the Wenatchee River upstream 6.5rm to a narrow bedrock canyon and series of falls is occupied and provides SR habitat (Brown 1992 p. 95; WDFW 1998, p. 293; Watershed Sciences 2002c, p. 32; Kelly Ringel 2003 p. 5-7; Kelly Ringel 2010a p. 5; Kelly Ringel 2010b p. 5; Kelly Ringel and De La Vergne 2010 p. 13, 16, 18, 69; Service *in litt.* 2004c (SCCSMTG); Service 2002a, p. 16; Service 2002a, p. 71300).	Chiwaukum Creek contains essential spawning and rearing habitat for the Chiwaukum local population, which supports migratory (fluvial) populations in the lower Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1207271 476789
Upper Columbia River Basins–Wenatchee River	Chikamin Creek	WA	Chikamin Creek from its confluence with the Chiwawa River upstream to its headwaters is occupied and provides SR habitat (Brown 1992 p. 92; WDFW 1998, p. 285; Proebstel et al. 1998 p. 78; Watershed Sciences 2002c, p. 30; Raekes 2008, p. 2; Hillman 2009 p. 29-30; Kelly Ringel and De La Vergne 2010 p. 13-14, 63; Service 2002a, p. 71300).	Chikamin Creek contains essential spawning and rearing habitat for the Chiwawa local population which have the most uniquely complex overwintering areas in the CHU and the population exhibits some of the most diverse movements including allucustrine, fluvial, and adfluvial in the Wenatchee CHSU. (See text for Wenatchee River CHSU above)	1207296 479037
Upper Columbia River Basins–Wenatchee River	Rock Creek	WA	Rock Creek from its confluence with the Chiwawa River upstream to its headwaters is occupied and provides SR habitat (Brown 1992 p. 92; Proebstel et al. 1998 p. 78; WDFW 1998, p. 285; Watershed Sciences 2002c, p. 30; Raekes 2008, p. 3; Hillman 2009 p. 29-30; Kelly Ringel and DeLaVergne 2010 draft p. 13-14, 63; Service 2002a, p. 71300).	Rock Creek typically supports 100-300 redds and is the stronghold of the Chiwawa River local population which have the most uniquely complex overwintering areas in the CHU and the population exhibits some of the most diverse movements including allucustrine, fluvial, and adfluvial in the Wenatchee CHSU. (See text for Wenatchee River CHSU above)	1207945 479629
Upper Columbia River Basins–Wenatchee River	Little Wenatchee River	WA	Little Wenatchee River from its mouth at Lake Wenatchee upstream to a cascades falls, and 14.1 km (8.8 mi) upstream of the falls, is occupied and provides SR habitat (WDFW 1998, p. 317; Kelly Ringel and DeLaVergne 2000 p2, 2001 p3; Watershed Sciences 2002c, p. 33-34; Service 2008l p. 2; Kelly Ringel and DeLa Vergne 2010 p. 13-22, 65; Service 2002a, p. 15).	Little Wenatchee R. contains essential spawning and rearing habitat for the Little Wenatchee adfluvial local population. It is also foraging habitat for other populations using Lake Wenatchee and is one of two sockeye salmon spawning tributaries to Lake Wenatchee. There has been a resident bull trout pop up of the falls, brook trout are present, and recent sightings are limited (See text for Wenatchee River CHSU above)	1208122 478304

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Wenatchee River	Phelps Creek	WA	Phelps Creek from its confluence with the Chiwawa River upstream to a barrier falls is occupied and provides SR habitat (Brown 1992 p. 59, 92; WDFW 1998, p. 285; Raekes 2008, p. 5; Hillman 2009 p. 29-30; Kelly Ringel and DeLa Vergne 2010 p. 13-14, 63; Service 2002a, p. 71300).	Phelps Creek contains essential spawning and rearing habitat for the Chiwawa local population which have the most uniquely complex overwintering areas in the CHU and the population exhibits some of the most diverse movements including allucustrine, fluvial, and adfluvial in the Wenatchee CHSU. (See text for Wenatchee River CHSU above)	1208513 480705
Upper Columbia River Basins–Wenatchee River	James Creek	WA	James Creek from its confluence with the Chiwawa River upstream to a gradient barrier is occupied and provides SR habitat for the Chiwawa population (Brown 1992 p. 64; WDFW 1998, p. 285; Service 2002a, p. 71300).	James Creek contains essential spawning and rearing habitat for the Chiwawa local population, which has the most uniquely complex overwintering areas in the CHU and the population exhibits some of the most diverse movements including allucustrine, fluvial, and adfluvial in the Wenatchee CHSU. (See text for Wenatchee River CHSU above)	1208564 480774
Upper Columbia River Basins–Wenatchee River	Alpine Creek	WA	Alpine Creek from its confluence with the Chiwawa River upstream to a gradient barrier is occupied and provides SR habitat for the Chiwawa population (Brown 1992 p. 62-64; WDFW 1998, p. 285; Watershed Sciences 2002c, p. 30; Service 2002a, p. 71300).	Alpine Creek contains essential spawning and rearing habitat for the Chiwawa local population, which has the most uniquely complex overwintering areas in the CHU and the population exhibits some of the most diverse movements including allucustrine, fluvial, and adfluvial in the Wenatchee CHSU. (See text for Wenatchee River CHSU above)	1208628 480840
Upper Columbia River Basins–Wenatchee River	Buck Creek	WA	Buck Creek from its confluence with the Chiwawa River upstream to a barrier falls is occupied and provides SR habitat for the Chiwawa pop. (Brown 1992 p. 59, 62-64, 92; WDFW 1998, p. 285; Service 2008l p. 2; Raekes 2008, p. 7; Service 2002a, p. 71300;).	Buck Creek contains essential spawning and rearing habitat for the Chiwawa local population, which has the most uniquely complex overwintering areas in the CHU and the population exhibits some of the most diverse movements which have diverse overwintering areas and movements including allucustrine, fluvial, and adfluvial in the Wenatchee CHSU. (See text for Wenatchee River CHSU above)	1208769 481039
Upper Columbia River Basins–Wenatchee River	Canyon Creek	WA	Canyon Creek from its confluence with the White River upstream to its headwaters is occupied and provides SR habitat (Brown 1992 p. 91; WDFW 1998, p. 321; Service 2002a, p.15; WDFW 2009 (Distribution Map).	Canyon Creek contains essential spawning and rearing habitat for the White River adfluvial local population. (See text for Wenatchee River CHSU above)	1208937 479069
Upper Columbia River Basins–Wenatchee River	Napeequa River	WA	Napeequa River from its confluence with the White River upstream 2.7 km (1.7 mi) to a 15 ft to a barrier falls provides rearing habitat and probably provides spawning habitat (Service 2002a, p.15; Service 2002a, p. 71301; WDFW 1998, p. 321; Kelly Ringel 2010b p. 4).	Napeequa R. contains essential rearing and possibly spawning habitat for the White River adfluvial local population. It is also foraging habitat due to the presence of spawning sockeye salmon. (See text for Wenatchee River CHSU above)	1208956 479215

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Wenatchee River	Jack Creek	WA	Jack Creek from its confluence with Icicle Creek upstream to a barrier falls is occupied and provides SR habitat for the Icicle populations (Kelly Ringel 1997 p. 12; Service 2005b p. 5; MCRFRO 2007 p. 16; USFS 2010a (ICEMP.xlsx); Service 2002a, p. 71300; WDFW 1998, p. 289).	Jack Creek contains essential spawning and rearing habitat for the Icicle local population which supports resident and fluvial populations in the lower Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1208984 476085
Upper Columbia River Basins–Wenatchee River	Panther Creek	WA	Panther Creek from its confluence with the White River upstream 1.1 km (0.7 m) to a barrier falls is occupied and provides SR habitat (Brown 1992 p. 59; WDFW 1998, p. 325; Service 2002a, p.15; Service 2002a, p. 71301; Kelly Ringel 2010a p. 3; Kelly Ringel 2010b p3).	Panther Creek contains essential spawning and rearing habitat for the White River adfluvial local population. (See text for Wenatchee River CHSU above)	1209278 479407
Upper Columbia River Basins–Wenatchee River	Rainy Creek	WA	Rainy Creek from its confluence upstream 12.0 km (7.4 mi) was historically occupied and is presumed to be currently occupied, and provides SR habitat (Watershed Sciences 2002c, p34; Service 2002a, p. 15; USFS 2006a (.xlsx); WDFW 2009 (Distribution Map)).	Rainy Creek contains essential spawning and rearing habitat for the resident portion of the upper Little Wenatchee local population. (See text for Wenatchee River CHSU above)	1209544 478527
Upper Columbia River Basins–Wenatchee River	French Creek	WA	French Creek from its confluence with Icicle Creek upstream to a barrier falls is occupied and provides SR habitat (Brown 1992 p. 94; WDFW 1998 p. 289; Kelly Ringel and Murphy 1999 p. 5; Nelson et al. 2009 p. 29; USFS 2010a (ICEMP.xlsx); Service 2002a, p. 71300).	French Creek contains essential spawning and rearing habitat for the Icicle local population which supports resident and fluvial populations in the lower Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1209613 476281
Upper Columbia River Basins–Wenatchee River	Henry Creek	WA	Henry Creek from its confluence with Nason Creek upstream 1.6 km (1.0 mi) is presumed occupied and provides FMO habitat for the Nason Creek population (WDFW 1998, p. 313; Watershed Sciences 2002c, p. 37; WDFW 2009 Distribution Map).	Henry Creek contains essential FMO habitat for the Nason Creek local population which supports fluvial/adfluvial populations in the Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1209899 477681
Upper Columbia River Basins–Wenatchee River	Mill Creek	WA	Mill Creek from its confluence with Nason Creek upstream to a barrier falls is occupied and provides SR habitat for the Nason Creek population (Brown 1992 p. 59; WDFW 1998j, p. 313; Watershed Sciences 2002c, p. 35; Service 2008j p. 3; USFS 2010a (ICEMP.xlsx); Kelly Ringel and DeLa Vergne 2010 p. 13, 17-18, 66; Service 2002a, p. 71301; Service 2006c (Mill Creek Culvert Replacement Project BO); Service *in litt.*2009b (Genetics/Salvage data)).	Mill Creek contains the majority of essential spawning and rearing habitat for the Nason Creek local population which supports fluvial/adfluvial populations in the Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1210102 477767

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Upper Columbia River Basins–Wenatchee River	Leland Creek	WA	Leland Creek from its confluence with Icicle Creek upstream 8.0 km (5.0 mi) is occupied and provides SR habitat (Kelly Ringel 1997 p. 8; USFS 2010a (ICEMP.xlsx); Service 2002a, p. 71300; N. Gayeski, Wild Fish Conservancy, pers comm., 2010; Service 2008b (Leavenworth National Fish Hatchery Project BO).	Leland Creek contains essential spawning and rearing habitat for the Icicle local population which supports resident and fluvial populations in the lower Wenatchee Core Area. (See text for Wenatchee River CHSU above)	1210382 476608
Upper Columbia River Basins - Wenatchee River	Lake Wenatchee	WA	Lake Wenatchee is surrounded by private, state and federal lands. Year round use supports the Core Area, and provides for adfluvial and allucustrine life history type (Kelly Ringel and De La Vergne 2010 p. 13-22, 30-40, 66; Service 2002a; Service 2008d (5-Year Review)).	Essential FMO for Chiwawa, White R, Lt Wenatchee, and Nason Cr local populations and provides for one of three allucustrine populations in the Upper Columbia CHU (See text for Wenatchee River CHSU above)	1207779 478226