

**Appendix E**  
**EPA Review of Washington Ecology’s Char Designations (Analysis of key bull trout spawning and rearing areas identified by USFWS that were not designated as Char use)**

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA’s Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
<b>WRIA 1 – Chilliwack/Nooksack</b>					
Damfino Cr (Dolly Varden) (upper 4 mi.)	N	NO	Core	No discussion found.	
Depot Creek	Y	YES			
Tomyhoi Cr and Tomyhoi Lake support Dolly Varden (3.2 mi.)	Y	NO (yes in extreme upper)		Isolated population verified pg53.	
N Fork Nooksack R – RM 49.5 to 51.3 (1.8 mi.)	Y	NO (Yes in 1/2mi in upper reach)	Core S 8/1-7/15	Reach probably used for rearing as located between spawning tributaries.	Due to proximity of known spawning use, 12°C needed to protect habitat for rearing juveniles <sup>2</sup> . This reach connects local populations <sup>3</sup> . Cold water temperatures (<12°C) prevail.
Maple Cr (RM 49.8) – mouth to Maple Falls (1.4 mi.)	Y	NO	Core S 8/1-7/15	Sub adult/juvenile foraging (verified) and likely spawning (not verified) pg66.	Flows into N.F. Nooksack (now with EPA Char finding).
LB Trib at RM 50.5 (0.5 mi)	Y		Core	No discussion found.	Flows into N.F. Nooksack (now with EPA Char finding).
S Fork Nooksack R – RM 10.0 to RM 19.0 (9 mi.)	N	NO (yes in far upstream reach)	Core S 9/1-7/1	Downstream extent of spawning is unknown but this reach is between spawning tribs so likely to have significant use by juveniles pg 72.	
Hutchinson Cr – RM 0.0 to headwaters (6.5 mi.)	Y	1/4mi in low end	Core S 9/1-7/1 lower 4mi.	Supports native char population. Small juveniles and sub adults sampled. Spawning habitat available but spawning not verified pg 73.	
Fobes Cr. (RM 18.5) (0.3mi.)	N	NO	Core	<sup>4</sup> Presumed juvenile presence p73.	
<b>WRIA 4-Upper Skagit</b>					
Newhalem Creek from RM 93.8 to RM 94.3 (1.5 mi.)	Y	YES	S 9/1-7/15	Documented staging of pre-spawning adults, spawning success unknown p85.	

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA's Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
Sauk River- from RM 30.4 to RM 34.9 (4.5mi.)	Y	NO (yes in upper section)	S 9/1-7/15	Use by char not described. Likely juvenile/sub adult rearing as spawning reaches in upper Sauk and in lower White Chuck system p80.	Due to proximity of known spawning use in Black Oak Creek (Lower White Chuck R. tributary) and in upper Sauk, this reach is needed to protect habitat for rearing juveniles and to connect these local populations. Cold water temperatures (<10°C) below this reach (Backman Park).
<b>WRIA 5 - Stillaquamish R.</b>					
S. Fk Stillaguamish R: Canyon Creek RM 6.3 to 11.5 (5.2 mi.)	Y	NO (yes adjacent upper reach)	Core S 9/15-7/1	Very low population, difficult to substantiate habitat use by life history. Not verified p98.	Due to proximity of known spawning use, this reach is needed to protect habitat for rearing juveniles.
<b>WRIA 7 - Snohomish/Skykomish R.</b>					
S. Fork Skykomish River – from confluence of Index Cr (~ RM 7.7) to forks of Foss R and Tye Rivers (~ RM 19.7) – (12 mi.)	Yes – Partial between Beckler and Foss River	NO	Core S 9/15-7/1	Use by juveniles/sub adults not discussed. Resident fish presence unknown. Use of area by migratory char depends on Sunset Falls trap operation p102.	Reach is important for connectivity of spawning populations in Foss River and in Beckler Creek.
Money Creek – mouth to forks and above (4.2 mi.)	N	NO	Core	Not discussed	No presence/migration distribution shown on the WDFW map
Miller River – mouth to forks/char designation (3.7 mi.)	N	NO	Core S 9/15-7/1	Not discussed	Presence/migration distribution shown on the WDFW map
Beckler River – mouth to forks/char designation (7.7 mi.)	Y	YES	Core S 9/15-7/1	Spawning verified rm 2 to 5 (pg.102).	
Tye River – mouth to RM 4.4	Y	NO	Core S 9/15-7/1	Not discussed	Flows to Foss River which now has EPA Char finding.
Foss River – mouth to forks/char designation (4.4 mi.)	Y	NO (yes above-rt fork)	Core	Besides Beckler, only known spawning in basin is in lower East Fork Foss (pg.102).	Due to proximity of known spawning, this reach is needed to protect habitat for rearing juveniles. Also is important for connectivity between populations.
<b>WRIA 10 – Puyallup/White River</b>					
Upper Puyallup River – from	Y	NO	Core	Specific locations of spawning	Reach is important for connectivity

<b>DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup></b>	<b>EPA finding for Char Use</b>	<b>Verified spawning (WDFW map, or other source)</b>	<b>EPA's Findings on Washington Uses &amp; Application of 13C</b>	<b>Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing</b>	<b>Other Considerations</b>
<b>confluence of Mowich River to Deer Creek (3.5 mi)</b>				unknown but area is known to be occupied (pg 122).	between populations in Mowich R. and the upper Puyallup River. Has Cold water temperatures (15°C far downstream at the Orting station).
<b>Carbon River – to below Evans Cr (rm 5.3 to 6.9, 1.6 mi).</b>	Y	No (yes 3 mi. upstream)	WAC Non-core/EPA Core	Spawning confined to reach above the canyon (rm 11-15) and verified at rm's 20,22, 28. Juveniles/sub adults verified in mainstem (rm18.6-22) (pg.123).	Check map miles to verify rm's of this area of concern. Due to proximity of known spawning (~1mile above Evans Creek confluence) this reach is needed to protect habitat for rearing juveniles. This is a glacially feed stream that is cold. (15°C far downstream at the Orting station).
<b>Upper White River – from just below the confluence of the Greenwater River to Huckleberry Creek/char designation (~ 7.9 mi.)</b>	Y (partial-dwnstr. to W.F. White R.)	NO	Core	Use of this portion of the White River not discussed (pg.125).	Due to high likelihood of bull trout occupation of both the upper West Fork and the upper mainstem of the White River, connectivity between these reaches is important. This is a glacial system that has a cold thermal regime.
Clearwater River and tributaries – mouth to Milky Creek (~ 7 mi.)	N	NO	Core S 9/1-7/1	Bull trout presence verified in lower mainstem pg.126. Use by spawners/juveniles not discussed.	
<b>West Fork White River and tributaries (~ 8.7 mi.)</b>	Y	NO	Core and S 9/1-7/1 in lower 2mi.	Presumed spawning in Hazzard Cr. Use of mainstem WF White not discussed (pg.125).	Due to high likelihood of bull trout occupation of both the upper West Fork and the upper mainstem of the White River, connectivity between these reaches is important. This is a glacial system that has a cold thermal regime.
<b>Greenwater River – mouth to headwaters including tributaries (~ 20.4 mi.)</b>	Y	NO	Core S 9/1-7/1 lower 2mi.	Known bull trout use in mainstem Greenwater from Pyramid Cr. downstream (pg.126). Tributaries of this reach of the Greenwater have known bull trout use including lower Pyramid, Lower Slide, and Midnight Cr. (#0126). George, Twentyeight	Possible that this basin was not included in the Ecology stream order/elevation screen due to stream order even though this system has high elevation and known bull trout use. Also, bull trout distribution of spawners and juveniles is poorly

<b>DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas<sup>1</sup></b>	<b>EPA finding for Char Use</b>	<b>Verified spawning (WDFW map, or other source)</b>	<b>EPA's Findings on Washington Uses &amp; Application of 13C</b>	<b>Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing</b>	<b>Other Considerations</b>
				mile, lower Foss, upper Pyramid and #0124 and #0125 are presumed to support bull trout due to accessibility (pg.126).	understood due to limited surveys and low bull trout abundance.
<b>Twenteight Mile Creek – mouth to Headwaters (old map said to RM 6.3)</b>	Y	NO	Core	Presumed to support bull trout due to accessibility from Greenwater (pg.126).	Flows to Greenwater which has an EPA Char finding.
<b>WRIA 16 – Skokomish River</b>					
<b>S.F. Skokomish River – from confluence of Brown Creek (RM 12.5) to Cedar Creek (RM 18) – 5.5 mi.</b>	Y	NO (yes in adj. Upper reach)	Core S 9/15-7/1	Majority of juveniles and sub adults located between rm 19-24 (known spawning reach) below anadromous barrier (pg.30). All redd observations have been in this reach (pg.49). Juveniles observed throughout SF Skokomish R. (pg.49).	This is an important reach as it connects local populations in upper SF and the Brown Creek.
<b>Brown Creek – 2.3 mi.</b>	Y	Yes (lowest mile)		'potential local population' (pg. 47) with multiple age classes observed (pg.49). Has coldwater springs and suitable and accessible habitat to support bull trout (pg. 51).	Identified as potential local population necessary to reduce risk to core area populations from stochastic events (pg.52).
<b>LeBar Creek – 1mi.</b>	Y	NO		Low numbers of multiple age classes of bull trout have been observed in the anadromous reaches (pg.49).	
<b>WRIA 18 – Dungeness/Gray Wolf</b>					
<b>Dungeness River – from confluence of Canyon Cr (~ RM 10.8) to Gray Wolf River – 5.2 mi.</b>	Y	NO	S 9/1-7/15	Observed throughout river upstream to impassable barrier rm 19 (pg.60). Resident Dolly Varden identified above barrier p60. Multiple age classes have been identified and suitable spawning and rearing habitat are present (spawning not verified, little survey effort to date) (pg.61).	
<b>Canyon Creek – mouth to RM</b>	Y	NO		Multiple age classes have been	Canyon Cr. bull trout part of middle

<b>DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas<sup>1</sup></b>	<b>EPA finding for Char Use</b>	<b>Verified spawning (WDFW map, or other source)</b>	<b>EPA's Findings on Washington Uses &amp; Application of 13C</b>	<b>Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing</b>	<b>Other Considerations</b>
8.2				identified and suitable spawning and rearing habitat are present (spawning not verified, little survey effort to date) (pg.61).	Dungeness local population up to rm19 (pg.61).
<b>Elwha River – from Lake Mills to Godkin Creek (RM 13 to RM 36.2) (23.2 mi.)</b>	<b>Y (Partial above Lake Mills)</b>	NO		Bull trout have been caught in the mainstem Elwha to rm 44 p58. Spawning not verified but level of effort has been low (pg.59).	Bull trout occur in moderately low numbers between the two dams (pg.59). Elwha core area currently has one population identified (pg.60).
<b>Little River – from mouth to south branch (2.8 mi.)</b>	<b>Y</b>	NO	Core	Bull trout present, 7 miles of accessible habitat, habitat conditions suitable for spawning (pg.60). High likelihood that this will be an important local population for recovery once dams are removed (pg.60).	Little River maintains very cold water temperatures (10.2°C max) (Lower Elwha S' Klallam Tribe Unpub. Data 1996).
<b>Cat Creek – mouth to RM 3.2 (char designation)</b>	<b>Y</b>	NO		Multiple age classes of bull trout have been observed in Boulder, Cat, Prescott, Stony, Hayes, Godkin, Buckinghorse, Delabarre creeks (pg.59).	
<b>WRIA 20 – Soleduck/Hoh Rivers</b>					
<b>Hoh River – from confluence of the South Fork (RM 30.8) to RM 40 (9.2 mi.)</b>	<b>Y</b>	YES (in lower portion of reach)	Core S 9/1-7/1	BT present (rm3-48) (pg.56). Spawning verified in the upper Hoh Basin (not defined). Fish in upper basin considered a local population (pg.57).	Presumed spawning just above SF Hoh River confluence based on movement of radio tagged adult (S. Brenkman, Pers. Comm. 6/14/05).
<b>Twin Creek – mouth to mile 1.0</b>	<b>Y</b>	NO	Core	Surveys conducted in 98 but spawning not observed (pg.57).	This tributary drains to a reach that now has EPA Char finding.
<b>LB Trib at RM 32.5 (2.8 mi.)</b>	<b>Y</b>	NO	Core	If this is Snider Creek same comment as above Surveys conducted in 98 but spawning not observed (pg.57).	This tributary drains to a reach that now has EPA Char finding.
<b>Taft Creek (1.4 mi.)</b>	<b>Y</b>	NO	Core	Surveys conducted in 98 but spawning not observed (p57).	This tributary drains to a reach that now has EPA Char finding.
<b>Mount Tom Creek – mouth to</b>	<b>Y</b>	NO	Core S9/1-7/1	No surveys of upper Mt Tom	This tributary drains to a reach that

<b>DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas<sup>1</sup></b>	<b>EPA finding for Char Use</b>	<b>Verified spawning (WDFW map, or other source)</b>	<b>EPA's Findings on Washington Uses &amp; Application of 13C</b>	<b>Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing</b>	<b>Other Considerations</b>
<b>char designation (4 mi.)</b>			lower 2 mi.	conducted (pg.56).	now has EPA Char finding
<b>South Fork Hoh River – mouth to RM 6.2</b>	Y	Y	Core S 9/1-7/1	Bull trout present rm 2-14 (pg.56). Spawning verified rm 10-14 p57.	1 redd observed at rm 5 12/31/2001 and 1 redd observed rm 3.4 12/5/2002 2005). Also 11 juveniles 7-11 in.length observed (J. McMillan Pers. Comm. 6/15/05). Temperature grab samples indicate cold water temperatures in May and October (Wild Salmon Center, Unpub. Data 2005).
<b>WRIA 21 – Queets/Quinault River</b>					
<b>Queets River – from confluence of Tshletchy Creek (RM 31) to RM 40 (9 mi.)</b>	Y	NO (yes in upper)	Core S 9/15-7/1	BT observed up to rm 46 (pg.55). Queets and assoc. tributaries upstream of Tshletshy Creek confluence is considered a local population (pg.55). Spawning documented in mainstem above rm 45 (pg.55). Status of Queets sub-population unknown (pg.54). This reach is within area considered to be local population.	Due to proximity of known spawning use, this reach has a high likelihood of being used by rearing juveniles.
<b>Quinault River – from RM 47 to RM 55.5 (8.5 mi.) (at North Fork Quinault confluence).</b>	Y	NO	S 9/15-7/1	One of two local populations (pg.52). Multiple age classes of native char both up/downstream of barrier near Graves Creek confluence (pg.53). Sympatric BT and DV with only DV in upper mainstem (pg.52). Status of Quinault R. bull trout and location of spawning are unknown (pg.52).	
<b>Graves Creek – mouth to confluence of Litchy Creek (0.7 mi.)</b>	Y	NO	S 9/15-7/1	No mention of use of the lower end of creek by bull trout (pg.52-53).	Presumed by FWS. Drains into the NF Quinault River
<b>North Fork Quinault River – mouth to confluence of Rustler Creek (7.2 mi.)</b>	Y	NO	S 9/15-7/1	One of two local populations (pg.52). Multiple age classes of native char upstream to at least rm	

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA's Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
				10 (pg.53).	
<b>WRIA 27 – Lewis River</b>					
Lewis River – from inlet of Yale Lake Reservoir to Swift Dam (RM 45- RM 48.3) (3.3 mi.)	N	NO	Core	Area of juvenile emigration (20/11). Important reach of connectivity for adfluvial population. Swift #1 and #2 dams prevent upstream migration (20/22). Juveniles have been captured in Swift #2 dam power canal (20/22).	
Lewis River – from RM 72.2 to RM 83.9 (11.7 mi., 2.7 of which are “unknown” BT use category)	N	NO	Core	Resident population may exist. Use as spawning and rearing habitat unknown.	
Speelyai Creek – mouth/confluence with Yale Lake/Reservoir to headwaters (4.5 mi.)	N	NO	Core	Suggests that a local population could be established in Speelyai Cr. if passage problems were corrected at the hatchery diversion (20/19).	No known bull trout use according to WDFW (Jim Byrne, WDFW, Pers. Comm. 11/17/05).
Ole/Rain Creeks – 1.4 mi.	N	NO	Core	Discussion not found (Ch.20).	No known bull trout use according to WDFW (Jim Byrne, WDFW, Pers. Comm. 11/17/05).
<b>WRIA 32 – Walla Walla</b>					
North Fork Touchet River – confluence of Wolf Creek to Gates Gulch (~3.8 mi.)	Y	NO	Core S 2/15-6/1	Current spawning habitat between Bluewood and Spangler creeks (10/24). Fry observed in the N. F. (10/25).	Documented occurrences of sub adults and adult within the NF Touchet between Wolf Fork and Gates Gulch, but spawning unknown (G. Mendel, WDFW, Pers. Comm. 5/5/05). Extent of spawner distribution in Wolf Cr. and N.F. Touchet R. render char designation necessary down to confluence for protection of rearing juveniles and connectivity between these portions of the population.
<b>WRIA 35 – Middle Snake River</b>					
Tucannon River – Camp Wooten State Park to confl. of	Y ( partial Little	NO (yes adjacent upper	Core 9/1-5/15	Sub adult and adults use this reach pre and post spawn (G. Mendel ,	Limited spawning has been verified in mainstem Tucannon River to the

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA's Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
Ponjab Creek/Tucannon Spring (3.3 mi.)	Tucannon Confl. upstrm)	reach)		WDFW Pers. Comm. 5/5/05)	confluence of Little Tucannon (G. Mendel, WDFW, Pers. Comm. 11/18/05).
Crooked Creek – from OR/WA border to confluence of First Creek (3 mi.)	Y	NO	S 2/15-6/15	Bull trout observed. Possible spawning, rearing, or adult resident habitat (Oregon Dept. Fish and Wildlife 1997).	Drains to Char waters in Oregon.
Asotin Creek – confluence of South Fork to char designation (0.8 mi.)	N	NO (yes far upstream)	Non-core	Area of juvenile rearing (24/13). Historical use by fluvial bull trout (24/14).	Historical and current sub adult or adult rearing,, no age-0 (G. Mendel, WDFW, Pers. Comm. 5/5/05). Appears that this reach has not been surveyed for redds.
George Creek – mouth to headwaters– 22.1 mi. -	Y (Partial from Combs Cr. upstrm)	NO	Non-core (core in uppermost reach)		There have been sub-adults observed, no recent confirmation (Pers. Comm. G. Mendel, WDFW 5/5/05). Stream habitat conditions in George Creek above the confluence of Coombs Creek at RM 16.2 are good. Bull trout presence reported in upper reach 1993.
Wormell Creek – 5.2 mi.	N	NO	Non-core	No discussion found (ch. 24 Asotin section)	No evidence of bull trout, (Pers. Comm. G. Mendel, WDFW 5/5/05).
Hefflefinger Creek – 5 mi.	N	NO	Non-core	No discussion found (ch. 24 Asotin section))	No evidence of bull trout, (Pers. Comm. G. Mendel, WDFW 5/5/05).
Coombs Creek – 4.5 mi.	Y	NO	Non-core	No discussion found (ch. 24 Asotin section	Drains into George Creek and is area important for population connectivity.
Charlie Creek – mouth to RM 2.3	N	NO	Non Core (WAC Char upstream)	Bull trout observed in Charley Cr. (24/16).	No redds observed during surveys conducted 1997-2000.
<b>WRIA 37 – Lower Yakima River</b>					
North Fork Ahtanum Creek – mouth to confluence of Middle Fork Ahtanum (~10.7 mi.) – <b>NON CORE</b>	N	NO	WAC non-core/EPA Core S 2/15-6/15	Has local population with resident life history form (21/7). Note: unclear if this is upstream or actually in the proposed reach. Redd surveys verify spawning activity but location of these surveys	No 'Middle Fork' area of contention. Issue is probably confluence with the South Fork. N. F. Ahtanum spawning is usually upstream of the Middle Fork Ahtanum confluence

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA's Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
				currently unknown (USFWS unpublished data).	
<b>WRIA 38 – Naches River</b>					
<b>South Fork Tieton River – from Rimrock Lake to Jayhawk Flats/Short and Dirty Creek confluence (1.6 mi.)</b>	Y	NO		Along with Indian Creek, represents strongest remaining bull trout local populations in Yakima Area (21/10).	S. Fork Tieton redd surveys are conducted on the upstream section however, this reach is used by multiple age classes as juveniles use this reach on their way to the lake (J. DeLaVergne, Pers. Comm. USFWS, 5/5/05).
<b>Bumping River-above Bumping lake upstream to Cougar Creek confluence</b>	Y				Area of known spawning as designated by WDFW Salmonscape.
<b>North Fork Rattlesnake Creek-lower 5.5 miles to a barrier (note not on the USFWS map)</b>	Y	NO		Juveniles/sub adults observed (J. De La Vergne, Pers. Comm., USFWS, 5/10/05).	
<b>Rattlesnake Creek – mouth to RM 10</b>	Y (Partial-downstrm to mouth of NF rattlesnake)	Yes	Core S 9/15-6/15 WAC non-core/EPA core in lowest 5.2mi.	Has local bull trout population (21/10). Redd surveys verify spawning activity but location of these surveys currently unknown (USFWS unpublished data). Adults and redds (probably bull trout) observed in this reach (G. Torretta USDA-FS, Pers. Comm. 9/23/02). Multiple age classes present in NF. Rattlesnake (J. DeLaVergne, Pers. Comm. USFWS, 5/5/05)	Most spawning is upstream in an index reach but there are adults that hold here in the summer months prior to spawning and during their upstream migrations. Adults/ juveniles/sub adults have been located in N.F. Rattlesnake (J. DeLaVergne, Pers. Comm. USFWS, 5/5/05).
<b>WRIA 39 – Upper Yakima</b>					
<b>Upper Yakima River – upstream from Lake Easton (RM 202) to RM 208 (6 mi.)</b>	N	NO (yes immediately upstream)	S 2/15-5/15	Documented spawning activity in this reach (upstream portion already designated as Char) shows this area supports local bull trout population (21/6).	Non-char reach is below area of documented spawning. WA Ecology designated the 4 mile reach below Keechelus dam as Char use.
<b>Cle Elum River – from Cle Elum Lake (RM 16) to Fortune Creek at RM 38 (22 mi.)</b>	Y	NO	Core	Limited population with very low abundance (21/3). Redd identified in upper Cle Elm but location not specified (Table 1, Ch.21).	Possible adfluvial population that uses Lake Cle Elum. Use by juveniles verified [USFWS 2003]

<b>DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas<sup>1</sup></b>	<b>EPA finding for Char Use</b>	<b>Verified spawning (WDFW map, or other source)</b>	<b>EPA's Findings on Washington Uses &amp; Application of 13C</b>	<b>Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing</b>	<b>Other Considerations</b>
<b>North Fork Teanaway – mouth to Stafford Creek (~ 8.2 mi.) -</b>	<b>Y Partial downstream to Jungle/Jack Confluence</b>	NO (yes in extreme upstream reach)	WAC non-core/EPA Core S 2/15-6/15	Bull trout population in mainstem and DeRoux Creek are a mix of resident and fluvial forms (21/12).	Spawning verified (WDFW) in far upstream tributary that has spawning and rearing habitat for local population. Use by juveniles verified in surveys RM 0-1.6 [WDFW Unpub. Data 1994, T. Pearson]. Based on the TMDL data (estimated natural condition assuming maximum stream shading would not yield cold temperature (>18C)[Ecology 2000, Ecology 2001]
<b>Jack Creek – confluence with NF Teanaway to mile 6.8</b>	<b>Y</b>	NO	WAC non-core/EPA Core	Bull trout observed (21/11).	Could provide potential spawning habitat. Use by a juvenile verified [WDFW Unpub. Data 1995, Todd Pearson]
<b>Jungle Creek – confluence with NF Teanaway to mile 4.0</b>	<b>Y</b>	NO	WAC non-core/EPA Core	Bull trout observed (21/11).	Could provide potential spawning habitat. Use by a juvenile verified [WDFW Unpub. Data 1995, Todd Pearson]
Middle Fork Teanaway (BT use “unknown”) – upper 9.2 mi.	<b>N</b>	NO	Core in upper ½ of reach. WAC Non-core/EPA core in lower 1/2	No bull trout sampled to date. Habitat appears suitable (21/11).	
<b>WRIA 45 – Wenatchee River (tributaries)</b>					
<b>Ingalls Creek – confluence with Peshastin Cr to headwaters (10.2 mi.)</b>	<b>Y</b>	YES		Peshastin watershed had large bull trout run in the past. Ingalls is currently only trib. of the watershed with a bull trout run (22/17).	Spawning surveys document redds RM 0.9-6.4 (USFWS, Unpublished data).
<b>Icicle Creek – RM 6-21 (15 mi.)</b>	Y (partial downstream to Jack Cr.)	NO (yes in upstream reach)	Core	Status and distribution described as unknown (22/17).	Data to support possible spawning in lower reaches currently not available. Resident sized adults in spawning color observed in Sept. near Ida Cr. confluence (downstream of EPA proposed Char reach). J. De La Vergne, Pers. Comm. 7/20/05). Due to proximity of known spawning use

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA's Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
					upstream, this reach is provides habitat for rearing juveniles.
<b>Jack Creek – confluence with Icicle Creek to headwaters (~ 7.5 mi.)</b>	Y	NO	Core	Not Discussed	Now included due to EPA char findings for Icicle Creek.
<b>Chiwaukum Creek – mouth to S Fk/char designation (6 mi.)</b>	Y (Partial-all except for lowest mi.)	YES	Core S 2/15-6/15	Status and distribution described as unknown (22/17).	
<b>Chiwawa River – RM 11 to char designation ( RM 30.3) 19.3 mi.</b>	Y (to Chikamin Cr. confl.)	YES (upper 3 miles)	Below is Core S8/15-6/15	Considered a stronghold for bull trout in the Basin supporting both resident and fluvial forms (22/13). Spawning surveys document redds RM 27.0-30.2 (USFWS, Unpub. Data 2004).	Extensive portion of reach has known spawning (WDFW). This local population is both adfluvial and fluvial with adults migrating from Lake Wenatchee and Columbia River. Data from smolt trapping at mouth indicates many juveniles (<150mm) present (WDFW Unpub. Data 2004c)
<b>WRIA 46 – Entiat River</b>					
<b>Entiat River – RM 15.5 to RM 28 (12.5 mi.)</b>	Y (partial-approx. 1mile below Fox Cr. confluence)	Yes	Core S 8/15-6/15	WDFW verified spawning above this reach at falls (near NF confluence). Spawning verified in a small upstream reach below falls (22/18).	Smolt trap data indicate bull trout juveniles out-migrating into in the lower Entiat mainstem. Spawning surveys document redds in 4 out of 11 consecutive years of surveys 1994-2004 in RM 16.2-28.1(USFWS, Unpub. Data 2004).
<b>Mad River – 1 mile downstream of char designation</b>	Y	NO (yes downstrm to Wilma Cr. confluence, approx 1mi.)	Core	Describes same spawning extent as WDFW (22/19). Likely that both fluvial and resident forms are present.	Spawning may be occurring below the jam downstream of Ecology char designation. Char is warranted due to proximity of spawning habitat to provide protection for rearing juveniles.
Tillicum Creek – confluence of Mad River to char designation (2.4 mi.)	N	NO	Core	Bull trout may spawn in Tillicum but not verified (22/19).	
<b>WRIA 48 – Methow</b>					
<b>Upper Methow – from</b>	Y Partial	YES	Core S 8/15-5/15	Migratory bull trout persist in the	One redd counted above Robinson

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA's Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
<b>confluence of Lost River (RM 73) to Trout Creek (RM 78) – (5 mi.)</b>	<b>to Robinson confluence</b>			Methow River (ch 22). Both resident and fluvial forms are present in the upper reaches. Redd counts are highly variable and surveys have been inconsistent. Lost River has bull trout population that is likely consisting of resident and migratory forms.	Creek confluence during incomplete survey in 2001 (USFWS Unpub. Data 2004). This is an important reach as it connects local populations in upper Methow and the Lost River
Twisp River – confluence of Little Bridge Creek to char designation (War Creek Campground) (~ 7.2 mi.)	N	NO (yes upstream)	Core S 8/15-6/15	Recent survey indicates mainstem is important spawning area (22/20).	Verified spawning upstream (WDFW). Spawning in the mainstem Twisp River is known to occur from the confluence with Reynolds Creek to South Creek (rkm 33.6-42.0) (USFWS change form). Juveniles have been captured in smolt trap located on Twisp R. downstream of Little Bridge Cr. Confluence [WDFW Unpub. Data, C. Snow]. No other data to substantiate bull trout spawning/rearing in this extensive reach was found. Noted that this may be an area of connectivity between populations in the upper Twisp R., Buttermilk Cr. and Little Bridge Creek.
Little Bridge Creek – confluence with Twisp River to headwaters (10 mi.)	Y	NO	Core	Has local population. No other discussion found (22/20).	
<b>Wolf Creek – 1.5 mi. downstream of char designation (N Fk Wolf confluence)</b>	Y	YES	Core S 8/15-6/1	Important spawning and rearing area for fluvial bull trout. Resident population also present (22/22).	
<b>Early Winters Creek – mouth to Varden Creek/char designation (5.2 mi.)</b>	Y	No (yes in adjacent upstream reach)	Core S 8/15-5/15		Spawning surveys document redds in 7 out of 9 consecutive years of surveys (most surveys were incomplete) 1996-2004 in RM 4.0-8.0 (upper 1.2 mi. of the reach)

DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup>	EPA finding for Char Use	Verified spawning (WDFW map, or other source)	EPA's Findings on Washington Uses & Application of 13C	Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing	Other Considerations
					(USFWS, Unpub Data 2004). Migratory bull trout spawn in mainstem Early Winters and in downstream reaches of Cedar and Huckleberry creeks (USFS 2003). Char is warranted due to proximity of spawning habitat to provide protection for rearing juveniles. Snorkel surveys on 7 dates in summer 1999 observed 4 juvenile bull trout in reaches near the mouth (USFS Unpub. Data 1999). USFS (1998) states resident and /or juvenile bull trout are found throughout lower Early Winters Creek.
<b>Goat Creek – 2.7 mi. downstream of char designation (Vanderpool Crossing to Cougar Creek)</b>	Y	No (yes in adjacent upstream)	Core	May be an important spawning area for fluvial and resident forms (22/23).	Spawning surveys document redds in 4 of past 5 years, RM 6.8-9.5 (USFWS, Unpub Data 2004)-. Due to proximity of known spawning use, this reach is habitat for rearing juveniles.
<b>Chewuch (also called Chewack) River – RM 23 to RM 31 (8 mi.)</b>	Y	No (yes adjacent upstream)	Core S 8/15-5/15		Verified spawning upstream (WDFW) both above and below Black Lake. Existing cold water and documented juvenile rearing in this reach. Due to extensive use of Lake Creek and the need for connectivity between Lake Creek and Chewuch populations. Likely use by rearing juveniles due to proximity to spawning habitat.
<b>WRIA 62 – Pend Oreille</b>					
WRIA 62 note: Installation of the Albeni falls Dam in 1952 on the lower Pend Oreille (near the Idaho/Washington border) resulted in total blockage of the migratory portion of the bull trout population. Bull trout were once abundant in this basin, but current information on bull trout presence in waters that are believed to have had bull trout populations in the past is limited.					

<b>DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup></b>	<b>EPA finding for Char Use</b>	<b>Verified spawning (WDFW map, or other source)</b>	<b>EPA's Findings on Washington Uses &amp; Application of 13C</b>	<b>Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing</b>	<b>Other Considerations</b>
<b>Slate Creek – from confluence with Pend Oreille River to headwaters (10.2 mi.)</b>	Y	NO		Several captures and observations of adult bull trout in lower end reported (24/11) indicating use by migratory adults.	Historic spawning and rearing in the lower end is possible but unknown. Temperature monitoring indicates stream rarely exceeds 12C (as measured just above mouth).
<b>Sullivan Creek – from confluence of Sullivan Lake to Gypsy Creek /char designation (~ 8.8 mi.)</b>	Y	NO		Dead female found below Mill Pond Dam in 1994 (23/11).	Has suitable spawning and rearing habitat and cold water (10-15C) water temperatures.
Harvey Creek – from Sullivan Lake to Paupac Creek (1.6 mi.)	N	NO	Core		No record of bull trout use. Possible use by bull trout is questionable due to subsurface flows posing a migration barrier (D. O'Connor, WDFW, Pers. Comm. 11/05). Has suitable spawning and rearing habitat above this reach and cold water (10-15C) water temperatures.
<b>Cedar Creek – mouth to headwaters (10 mi.)</b>	<b>Y (Partial-above the barrier)</b>	NO	Lower portion is WAC non-core/EPA Core	Adult observed 1995 (23/10) above dam.	Dam scheduled to be removed in October 2005. Currently unknown if this project has been completed as of 11/05. One sub adult captured below dam 2003. Ione Dam is passage barrier at RM 1.2. Habitat above dam is considered excellent for rear/spawning with cold water temperatures (8-13C). Habitat below dam adequate for migration only.
Ruby Creek – mouth to headwaters (12.5 mi.)	N	NO	Core with lowest 1mi. WAC non-Core		Spawning rearing habitat available above RM2, migration habitat in lower reach. Temperatures considered seasonally acceptable for bull trout (20C max was recorded).
Mill Creek – mouth to mile 1.3	N	NO	WAC non-core/EPACore	A natural waterfall at RM 1.3 is a permanent fish passage barrier. Single bull trout observed (23/10) below barrier. Suitable spawning	Temperatures in lower Mill Creek reach 16 7DADM based on 2002 and 2003 data (Kalispell Tribe, Unpub. Data 2005a). Water

<b>DOE reaches w/out Char use that are identified by USFWS as key bull trout spawning and rearing areas <sup>1</sup></b>	<b>EPA finding for Char Use</b>	<b>Verified spawning (WDFW map, or other source)</b>	<b>EPA's Findings on Washington Uses &amp; Application of 13C</b>	<b>Evidence from draft USFWS Recovery plan supporting bull trout use for spawning/rearing</b>	<b>Other Considerations</b>
				habitat available.	temperatures are considered cold and adequate (limited temperature data).
Tacoma Creek – upper 8.5 mi. (from confluence of Little Tacoma up to headwaters)	N	NO	Core		Only available temperature data is ` 8 summer grab samples collected 2002-2004 (Kalispell Tribe, Unpub. Data 2005b) is insufficient to support char designation. Bull trout not known to occur but high quality suitable habitat is present.
<b>S Fk Tacoma Creek – confluence with Tacoma Cr to headwaters (10.2 mi.)</b>	Y	NO	Core, lower part WAC non-core/EPA Core		Suitable temperatures recorded (max 13°C) in lower SF Tacoma Cr. (Kalispell Tribe, Unpublished Data). Bull trout not known to occur but high quality suitable habitat is present.
<b>NF of S Fk Tacoma Cr. (6.7 mi.)</b>	Y	NO	Core		Suitable temperatures recorded max 12°C) in upper NF of SF Tacoma Cr. (Kalispell Tribe, Unpublished Data). Bull trout not known to occur but high quality suitable habitat is present.
<b>Indian Creek – mouth to headwaters (5.5 mi.)</b>	Y	NO	WAC non-core/EPA Core	Gravid female captured in trap. Adult observed 0.5 miles up from mouth (23/10). Water temperature described as ‘excellent’ and other habitat features appear suitable.	Water temperature <14°C 7DADM in 2003 (Kalispell Tribe, Unpubl. Data, John Gross).

Y=yes, N=no

1. References to river miles in this appendix are approximate, for the exact locations regarding EPA's disapproval action see EPA's GIS maps titled *EPA Findings on Washington's Designated Uses and Application of 13°C to Protect Spawning & Incubation*, and *Application of 13°C and 9°C to Protect Spawning and Incubation*.

2. Juvenile bull trout are those who are still rearing in their natal streams or in relatively close proximity to where they emerged from spawning grounds. These fish are generally up to 2 years old and are <6 inches (50-150mm). They are distinguished from sub-adults as they are not yet migratory and they are in a smaller size class (150-300mm for sub adults).

3. The term ‘local population’ is defined as follows in the FWS Recovery Plan (FWS 2004): A group of bull trout that spawn within a particular stream or portion of a stream system. Multiple local populations may exist within a Core Area. A local population is considered to be the smallest group of fish that is known to represent an interacting

reproductive unit. For most waters where specific information is lacking a local population may be represented by a single headwater tributary or complex of headwater tributaries. Gene flow may occur between local populations (e.g., those within a core population), but is assumed to be infrequent compared with that among individuals within a local population.

4. Presumed by FWS: Based on biological judgment, including consideration of suitable habitat availability, life history strategies, proximity/connectivity to adjacent areas of known occupied habitat, and extrapolation of range from similar systems (WDFW 2003).