

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

**Chapter 13. Mid-Columbia Recovery Unit—Umatilla River Critical Habitat Unit**



## Chapter 13. Umatilla River Critical Habitat Unit

The Umatilla River CHU is located in northeastern Oregon in Umatilla and Union Counties. There are two known bull trout local populations in this unit: one in the North Fork Umatilla River and one in North Fork Meacham Creek. Bull trout in this basin are primarily fluvial migrants that overwinter in middle and lower sections of the mainstem Umatilla River. The Draft Recovery Plan (Service 2002a) indicates the need to maintain these local populations to provide for the recovered distribution of bull trout. The Umatilla River population provides connectivity between core areas in the middle Columbia River. The absence of brook trout in the Umatilla River also increases the recovery potential of bull trout in this Basin. The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) owns lands in this basin.

### **Rationale for determining critical habitat based on the Seven Guiding Principles**

1. *Conserve opportunity for diverse life-history expression* – Both fluvial and resident bull trout life-history forms occur in the Umatilla River Basin. Fish passage actions over the next decade are expected to improve conditions for maintaining and enhancing the fluvial population in lower and middle sections of the river.
2. *Conserve opportunity for genetic diversity* - Bull trout from the Umatilla River Basin are part of the “Inland” lineage (Spruell and Allendorf 1997). Although there was little genetic variation within populations there was substantial variation between populations (Bellerud et al. 1997, p. 1; Spruel and Allendorf 1997), hence the need to conserve all populations of bull trout to preserve genetic diversity of the species.
3. *Ensure bull trout are distributed across representative habitats* – The Umatilla River contains stream habitats representative of the Blue Mountains. Bull trout were once more widely distributed across the Umatilla River Basin historically compared to their current distribution (Buchanan et al. 1997).
4. *Ensure sufficient connectivity among populations* – The Umatilla River core area is important for population connectivity through the middle Columbia River region. Along the Columbia River, the Umatilla River is situated between the John Day River and the Walla Walla River. Without the Umatilla River population, there would be almost 100 miles of river between occupied river basins. The loss of this population would greatly reduce the potential for connectivity between core areas in the middle Columbia River.
5. *Ensure sufficient habitat to support population viability (e.g., abundance, trend indices)* – Suitable spawning habitat is limited in the Umatilla River, however, there is potential for restoration as the upper tributaries continue to recover from past heavy logging and grazing. In addition, significant actions are being taken to restore the lower river to improve foraging, migrating and overwintering habitat.
6. *Consider threats (e.g., climate change)* – The Umatilla River Basin could be vulnerable to the affects of climate change given its relatively low elevation and the limited amount of suitable cold water habitat. On the positive side, the absence of brook trout in the Umatilla River increases the recovery potential of bull trout within this basin.
7. *Ensure sufficient redundancy in conserving population units* – The Umatilla River core area is in an important geographic location for maintaining bull trout population connectivity in the

middle Columbia River region. Within the basin, all suitable habitat is essential to population persistence given the relatively small size of the basin and the limited amount of suitable spawning habitat.

The following water bodies are included in this CHU (see Table 44):

**Lower Umatilla River** from its confluence with the Columbia River upstream 89 km (55 mi) to the western boundary of the Confederated Tribes of the Umatilla Indian Reservation is FMO habitat and an important migratory connection to FMO habitat in the Columbia River. Bull trout are difficult to census in the lower river because they are few in number and occur in this section primarily during winter and spring months when high flows make detection difficult. However, bull trout are occasionally observed in the lower river. A bull trout was captured at the upstream migrant fish collection facility at Three Mile Falls Dam in June 2009, and two were captured in spring 2007 (Paul Sankovich, pers. comm. 2009). Bull trout have also been captured at that facility in spring 1995, 1996, 1999 and 2000, and one was captured at the juvenile collection facility at Westland in 1994 (ODFW in litt. 2000b). Bull trout were also caught by anglers near the town of Echo in 1998 and at approximately River Mile 42 in 1997 during the winter steelhead fishery. During November 1999, two bull trout were salvaged from lower McKay Creek, after McKay Reservoir water releases for fish migration were ended for the season.

Upper Umatilla River from the western boundary of the Confederated Tribes of the Umatilla Indian Reservation upstream 52.8 km (32.8 mi) to the South Fork/North Fork Umatilla River confluence. Most of the adult and sub-adult fluvial bull trout in the basin overwinter in this section of the river. The upper mainstem section of the Umatilla River is an important area where most of the adults forage and overwinter and is used seasonally for subadult rearing of fluvial bull trout. Bull trout use of the mainstem Umatilla River is concentrated upstream of Thornhollow Creek, with some use extending downstream to McKay Creek (Sankovich et al. 2003). Data from screw traps and radio-tagged fish show bull trout migrants using the Umatilla River downstream of Thornhollow Creek beginning in late October/early November. Bull trout have been found between the towns of Pendleton and Thornhollow, from late October until June, when fish begin to migrate upstream, probably in response to warming water temperatures (Sankovich et al. 2003). The Umatilla River from Thornhollow Creek upstream to the North Fork/South Fork Umatilla River confluence is used seasonally by rearing subadult and overwintering adult bull trout. Radio-telemetry data indicate that bull trout occupy this reach from late October until July (Sankovich et al. 2003).

**Ryan Creek** from the confluence of the Umatilla River upstream 3.2 km (2 mi) is used for rearing and migration (Germond et al. 1996, Contor et al. 1995).

**Meacham Creek** from its confluence with the Umatilla River upstream 29 km (18 mi) to the mouth of East Meacham Creek is FMO habitat. Meacham Creek supports migratory movements of fluvial bull trout between spawning grounds in its North Fork and the Umatilla River. It is an essential migratory corridor and has the potential to be important foraging and overwintering habitat. In its present degraded state, Meacham Creek below the confluence with North Fork Meacham Creek is only capable of supporting migratory movements of fluvial bull trout. Despite its poor condition, Meacham Creek is essential to bull trout because the maintenance of a migratory corridor to the Umatilla River is critical to the viability of the local population in

North Fork Meacham Creek. If restored, Meacham Creek could serve as adult overwintering habitat in the future.

**North Fork Meacham Creek** from its confluence with Meacham Creek upstream 4.5 km (2.8 mi) to the mouth of Bear Creek is essential FMO habitat. The lower portion of North Fork Meacham Creek provides FMO habitat. Above the mouth of Bear Creek upstream 11.5 km (7.1 mi) provides spawning and rearing of both fluvial and resident bull trout. This creek supports a local population that is very small and at risk of extirpation, but its recovery is considered essential to bull trout recovery in the Umatilla River Basin. In 2001, a few adult bull trout were observed several miles above the mouth during summer steelhead escapement surveys in April and May and one was observed during spring chinook pre-spawning surveys in July. Spawning bull trout have been found upstream of the confluence with Bear Creek and also in Pot Creek. Resident and fluvial bull trout have been observed in this area. When redd counts were initiated in 1994, two redds were observed in the reach between Bear Creek and Pot Creek (ODFW in litt. 2000a). In 2002, two bull trout redds were detected (ODFW, in litt. 2000b). Bull trout spawning has not been documented in this area since 2002, and the population appears to have dropped below detectible levels. However, recovery of a local population in North Fork Meacham Creek is essential to bull trout recovery in the Umatilla River Basin and there are ongoing efforts to restore habitat in both Meacham and North Fork Meacham creeks.

**Pot Creek** from the confluence with North Fork Meacham Creek upstream 4.8 km (3.0 mi) provides spawning and rearing of both fluvial and resident bull trout. The Pot Creek local population is very small and at risk of extirpation, but its recovery is considered essential to bull trout recovery in the Umatilla River Basin. Spawning bull trout have been found upstream of the confluence in Pot Creek. Resident and fluvial bull trout have been observed in this area. When redd counts were initiated in 1994, two redds were observed in the reach between Bear Creek and Pot Creek and one redd was observed in Pot Creek. One redd was observed in Pot Creek in 1995 (ODFW in litt. 2000a).

**North Fork Umatilla River** from its confluence with the South Fork Umatilla River upstream 16.6 km (10.3 mi) to its headwaters along with Coyote and Woodward creeks supports the highest concentrations of spawning bull trout in the Umatilla River Basin. Bull trout in the North Fork Umatilla River are currently the only functional local population in the Umatilla River Basin (Anglin et al. 2008). Redd counts conducted annually since 1994 by ODFW, the Confederated Tribes of the Umatilla Indian Reservation, and the U.S. Forest Service had found at least 20 redds each year through 2006, with over 100 redds detected in the North Fork Umatilla River in 1999, 2000, and 2001 (Germond et al. 1996; Buchanan et al. 1997; ODFW, in litt. 2007c). However, the count dropped to 12 redds in 2007. Redd sizes in the North Fork Umatilla River suggest that this local population consists mostly of fluvial fish (Paul Sankovich, pers. comm. 2009). Population estimates of large bull trout (> 370mm) range from a high of 22 fish in 2007 to a low of 2 in 2006 (Budy et al. 2008). However, small sample sizes from the Umatilla River result in very high variance in the mark-recapture population estimates from the Budy et al. (2008) study.

**Coyote Creek** from its confluence with the North Fork Umatilla River upstream 1.6 km (1.0 mi) is SR habitat and helps support the highest concentrations of spawning bull trout in the Umatilla River Basin.

**Woodward Creek** from its confluence with the North Fork Umatilla River upstream 1.6 km (1.0 mi) is SR habitat and helps support the highest concentrations of spawning bull trout in the Umatilla River Basin.

**Table 44. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Umatilla River CHU/CHSU**

| <b>CHU—CHSU</b>     | <b>Water Body Name</b> | <b>State</b> | <b>Information Documenting Bull Trout Occupancy</b>  | <b>Essential Habitat Rationale</b> | <b>LLID</b>         |
|---------------------|------------------------|--------------|--|------------------------------------|---------------------|
| Umatilla River—None | Coyote Creek           | OR           | Coyote Creek from its confluence with the North Fork Umatilla River upstream 1.6 km (1.0 mi) is SR habitat and helps support the highest concentrations of spawning bull trout in the Umatilla River Basin.  | See CHU text                       | 1181391<br>457319   |
| Umatilla River—None | Meacham Creek          | OR           | Meacham Creek from its confluence with the Umatilla River upstream 29 km (18 mi) to the mouth of East Meacham Creek is FMO habitat. Meacham Creek supports migratory movements of fluvial bull trout between spawning grounds in its North Fork and the Umatilla River. It is an essential migratory corridor and has the potential to be important foraging and overwintering habitat. In its present degraded state, Meacham Creek below the confluence with North Fork Meacham Creek is only capable of supporting migratory movements of fluvial bull trout. Despite its poor condition, Meacham Creek is essential to bull trout because the maintenance of a migratory corridor to the Umatilla River is critical to the viability of the local population in North Fork Meacham Creek. If restored, Meacham Creek could serve as adult overwintering habitat in the future. | See CHU text                       | 1183604<br>457023.1 |

| CHU—CHSU            | Water Body Name          | State | Information Documenting Bull Trout Occupancy   | Essential Habitat Rationale | LLID              |
|---------------------|--------------------------|-------|--|-----------------------------|-------------------|
| Umatilla River—None | North Fork Meacham Creek | OR    | <p>North Fork Meacham Creek upstream 4.5 km (2.8 mi) to the mouth of Bear Creek is essential FMO habitat. The lower portion of North Fork Meacham Creek provides FMO habitat. Above the mouth of Bear Creek upstream 11.5 km (7.1 mi) provides spawning and rearing of both fluvial and resident bull trout. This creek supports a local population that is very small and at risk of extirpation, but its recovery is considered essential to bull trout recovery in the Umatilla River Basin. In 2001, a few adult bull trout were observed several miles above the mouth during summer steelhead escapement surveys in April and May and one was observed during spring chinook pre-spawning surveys in July. Spawning bull trout have been found upstream of the confluence with Bear Creek and also in Pot Creek. Resident and fluvial bull trout have been observed in this area. When redd counts were initiated in 1994, two redds were observed in the reach between Bear Creek and Pot Creek (ODFW in litt. 2000a). In 2002, two bull trout redds were detected (ODFW, in litt. 2007c). Bull trout spawning has not been documented in this area since 2002, and the population appears to have dropped below detectible levels. However, recovery of a local population in North Fork Meacham Creek is essential to bull trout recovery in the Umatilla River Basin and there are ongoing efforts to restore habitat in both Meacham and North Fork Meacham creeks.</p> | See CHU text                | 1182906<br>455268 |

| CHU—CHSU            | Water Body Name           | State | Information Documenting Bull Trout Occupancy   | Essential Habitat Rationale | LLID              |
|---------------------|---------------------------|-------|--|-----------------------------|-------------------|
| Umatilla River—None | North Fork Umatilla River | OR    | North Fork Umatilla River from its confluence with the South Fork Umatilla River upstream 16.6 km (10.3 mi) to its headwaters along with Coyote and Woodward creeks supports the highest concentrations of spawning bull trout in the Umatilla River Basin. Bull trout in the North Fork Umatilla River are currently the only functional local population in the Umatilla River Basin (Anglin et al. 2008). Redd counts conducted annually since 1994 by ODFW, the Confederated Tribes of the Umatilla Indian Reservation, and the U.S. Forest Service had found at least 20 redds each year through 2006, with over 100 redds detected in the North Fork Umatilla River in 1999, 2000, and 2001 (Germond et al. 1996; Buchanan et al. 1997; ODFW, in litt. 2000b). However, the count dropped to 12 redds in 2007. Redd sizes in the North Fork Umatilla River suggest that this local population consists mostly of fluvial fish (Paul Sankovich, pers. comm. 2009). Population estimates of large bull trout (> 370mm) range from a high of 22 fish in 2007 to a low of 2 in 2006 (Budy et al. 2008). However, small sample sizes from the Umatilla River result in very high variance in the mark-recapture population estimates from the Budy et al. (2008) study. | See CHU text                | 1181885<br>457258 |
| Umatilla River—None | Pot Creek                 | OR    | Pot Creek from the confluence with North Fork Meacham Creek upstream 4.8 km (3.0 mi) provides spawning and rearing of both fluvial and resident bull trout. The Pot Creek local population is very small and at risk of extirpation, but its recovery is considered essential to bull trout recovery in the Umatilla River Basin. Spawning bull trout have been found upstream of the confluence in Pot Creek. Resident and fluvial bull trout have been observed in this area. When redd counts were initiated in 1994, two redds were observed in the reach between Bear Creek and Pot Creek and one redd was observed in Pot Creek. One redd was observed in Pot Creek in 1995 (ODFW in litt. 2000a).   | See CHU text                | 1182015<br>455536 |
| Umatilla River—None | Ryan Creek                | OR    | Ryan Creek from the confluence of the Umatilla River upstream 3.2 km (2 mi) is used for rearing and migration (Germond et al. 1996, Contor et al. 1995).   | See CHU text                | 1183153<br>457226 |

| CHU—CHSU            | Water Body Name      | State | Information Documenting Bull Trout Occupancy   | Essential Habitat Rationale | LLID              |
|---------------------|----------------------|-------|--|-----------------------------|-------------------|
| Umatilla River—None | Umatilla River-lower | OR    | <p>Lower Umatilla River from its confluence with the Columbia River upstream 89 km (55 mi) to the western boundary of the Confederated Tribes of the Umatilla Indian Reservation is FMO habitat and an important migratory connection to FMO habitat in the Columbia River. Bull trout are difficult to census in the lower river because they are few in number and occur in this section primarily during winter and spring months when high flows make detection difficult. However, bull trout are occasionally observed in the lower river. A bull trout was captured at the upstream migrant fish collection facility at Three Mile Falls Dam in June 2009, and two were captured in spring 2007 (Paul Sankovich, pers. comm. 2009). Bull trout have also been captured at that facility in spring 1995, 1996, 1999 and 2000, and one was captured at the juvenile collection facility at Westland in 1994 (ODFW in litt. 2000b). Bull trout were also caught by anglers near the town of Echo in 1998 and at approximately River Mile 42 in 1997 during the winter steelhead fishery. During November 1999, two bull trout were salvaged from lower McKay Creek, after McKay Reservoir water releases for fish migration were ended for the season.</p> | See CHU text                | 1193384<br>459144 |

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| <b>CHU—CHSU</b>     | <b>Water Body Name</b> | <b>State</b> | <b>Information Documenting Bull Trout Occupancy</b>   | <b>Essential Habitat Rationale</b> | <b>LLID</b>       |
|---------------------|------------------------|--------------|---|------------------------------------|-------------------|
| Umatilla River—None | Umatilla River-upper   | OR           | Upper Umatilla River from the western boundary of the Confederated Tribes of the Umatilla Indian Reservation upstream 52.8 km (32.8 mi) to the South Fork/North Fork Umatilla River confluence. Most of the adult and sub-adult fluvial bull trout in the basin overwinter in this section of the river. The upper mainstem section of the Umatilla River is an important area where most of the adults forage and overwinter and is used seasonally for subadult rearing of fluvial bull trout. Bull trout use of the mainstem Umatilla River is concentrated upstream of Thornhollow Creek, with some use extending downstream to McKay Creek (Sankovich et al. 2003). Data from screw traps and radio-tagged fish show bull trout migrants using the Umatilla River downstream of Thornhollow Creek beginning in late October/early November. Bull trout have been found between the towns of Pendleton and Thornhollow, from late October until June, when fish begin to migrate upstream, probably in response to warming water temperatures (Sankovich et al. 2003). The Umatilla River from Thornhollow Creek upstream to the North Fork/South Fork Umatilla River confluence is used seasonally by rearing subadult and overwintering adult bull trout. Radio-telemetry data indicate that bull trout occupy this reach from late October until July (Sankovich et al. 2003). | See CHU text                       | 1193384<br>459144 |
| Umatilla River—None | Woodward Creek         | OR           | Woodward Creek from its confluence with the North Fork Umatilla River upstream 1.6 km (1.0 mi) is SR habitat and helps support the highest concentrations of spawning bull trout in the Umatilla River Basin.   | See CHU text                       | 1180799<br>457361 |