

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

**Chapter 25. Upper Snake Recovery Unit—Jarbidge River Critical Habitat Unit**



## Chapter 25. Jarbidge River Critical Habitat Unit

The Jarbidge River CHU is essential to bull trout conservation. Jarbidge River bull trout are a high conservation priority for maintaining the maximum genetic diversity and evolutionary potential of the species across its range. The ecological setting of this CHU is unique. It is the southernmost extent of the species' range. The loss of bull trout in this CHU would result in a substantial modification of the species' range. Bull trout in the Jarbidge area are isolated from the rest of the species' range due to a combination of physical barriers that have been in place for over a century and habitat that has been unsuitable for much of this same period of isolation. Although recognized as being within the Snake River complex, recent genetic analyses conducted by the Service's Abernathy Fish Technology Center indicate that genetic characteristics of bull trout in the Jarbidge area do differ from other populations. Local genetic adaptations of this southernmost bull trout population may be a very desirable trait in the face of global climate change (see Appendix 1 for more detailed information).

The Jarbidge River CHU encompasses the Jarbidge and Bruneau River basins, which drain into the Snake River within C.J. Strike Reservoir upstream of Grand View, Idaho. The Jarbidge River CHU is located approximately 112.6 km (70 mi) north of Elko within Elko County in northeastern Nevada and Owyhee County in southwestern Idaho.

The Jarbidge River CHU includes 245.1 km (152.3 mi) of streams designated as critical habitat. The Jarbidge River CHU contains six local populations of resident and migratory bull trout and the stream segments in the Jarbidge River CHU provide either FMO or spawning and rearing habitat. These habitats maintain the population and the migratory life-history form essential to the species' long-term conservation and provide habitat necessary for the recovered distribution of bull trout (Service 2002a, pp. 7–9). The stream segments that make up the Jarbidge CHU are described below. The following water bodies are included in this CHU (see Table 62):

(A) Bruneau River from the Buckaroo Ditch irrigation diversion structure near Hot Spring, Idaho, upstream 68 km (42.2 mi) to its confluence with the Jarbidge River provides FMO habitat for migratory bull trout, but the extent and frequency of occupancy is unknown.

(B) Jarbidge River from its confluence with the Bruneau River upstream 47.3 km (29.4 mi) to the joint confluence of the East Fork and West Fork Jarbidge Rivers provides FMO habitat for migratory bull trout, but the extent and frequency of occupancy is unknown.

(C) West Fork Jarbidge River (also termed Jarbidge River) from its confluence with the East Fork Jarbidge River upstream 31.2 km (19.4 mi) to a permanent natural barrier. The lower West Fork Jarbidge River provides FMO habitat between its confluence with the East Fork and its confluence with Snowslide Gulch (28 km (17.4 mi)). Spawning and rearing habitat for the West Fork Jarbidge River local population and migratory bull trout is located from Snowslide Gulch 3.2 km (2.0 mi) upstream to the headwaters. An unnamed western headwater tributary from its confluence with the West Fork Jarbidge River upstream 1.4 km (0.9 mi) to a permanent natural barrier provides additional spawning and rearing habitat for the West Fork Jarbidge River local population. Fox Creek from its confluence with the West Fork Jarbidge River upstream 1.4 km (0.8 mi) to a permanent natural barrier likely provides foraging and overwintering habitat for the West Fork Jarbidge River and Pine Creek local populations and migratory bull trout from the West Fork Jarbidge River, but the extent and frequency of occupancy is unknown. Sawmill Creek from its confluence with the West Fork Jarbidge River upstream 0.5 km (0.3 mi)

to a permanent natural barrier provides spawning and rearing habitat for the West Fork Jarbidge River local population.

(D) Deer Creek from its confluence with the West Fork Jarbidge River upstream 10.4 km (6.5 mi) to a permanent natural barrier provides foraging and overwintering habitat and a cool refuge from elevated temperatures in the lower West Fork Jarbidge River for migratory bull trout, but the extent and frequency of occupancy is unknown. Deer Creek may also provide spawning and rearing habitat under recovered conditions.

(E) Jack Creek from its confluence with the West Fork Jarbidge River upstream 4.7 km (2.9 mi) to a permanent natural barrier. Lower Jack Creek provides FMO habitat necessary to maintain connectivity among local populations in the Jarbidge River population. Jack Creek provides spawning and rearing habitat upstream of its confluence with Jenny Creek. Jenny Creek from its confluence with Jack Creek upstream 0.2 km (0.1 mi) to the upper extent of fish distribution likely provides additional foraging and overwintering habitat for the Jack Creek local populations and migratory bull trout from the West Fork Jarbidge River, but the extent and frequency of is unknown.

(F) Pine Creek (also termed West Fork Pine Creek) from its confluence with the West Fork Jarbidge River upstream 7.3 km (4.5 mi) to a permanent natural barrier provides spawning and rearing habitat. An unnamed western tributary from its confluence with Pine Creek upstream 1.5 km (1.0 mi) to a permanent natural barrier and an unnamed eastern headwater tributary from its confluence with Pine Creek upstream 2.4 km (1.5 mi) to a permanent natural barrier provide spawning and rearing habitat for the Pine Creek local population and migratory bull trout from the West Fork Jarbidge River.

(G) East Fork Jarbidge River from its confluence with the West Fork Jarbidge River upstream 34.7 km (21.6 mi) to a permanent natural barrier provides spawning and rearing habitat. The lower East Fork Jarbidge River from its confluence with the West Fork Jarbidge River upstream to its confluence with Fall Creek provides FMO habitat and connectivity for local populations. Spawning and rearing habitat is located upstream of Fall Creek in its headwaters. An unnamed eastern headwater tributary from its confluence with the East Fork Jarbidge River upstream 3.5 km (2.2 mi) to a permanent natural barrier provides spawning and rearing habitat. Fall Creek from its confluence with the East Fork Jarbidge River upstream 3.4 km (2.1 mi) to a permanent natural barrier; an unnamed lower western tributary from its confluence with Fall Creek upstream 0.3 km (0.2 mi) to a permanent natural barrier; and an unnamed upper western tributary from its confluence with Fall Creek upstream 0.5 km (0.3 mi) to a permanent natural barrier provide spawning and rearing habitat for the East Fork Jarbidge River local population. Cougar Creek from its confluence with the East Fork Jarbidge River upstream 3.1 km (1.9 mi) to a permanent natural barrier provides spawning and rearing habitat for the East Fork Jarbidge River local population.

(H) Dave Creek from its confluence with the East Fork Jarbidge River upstream 13.9 km (8.6 mi) to a permanent natural barrier provides FMO habitat in the lower reach and spawning and rearing habitat for the Dave Creek local population in the upper reach.

(I) The following reaches provide spawning and rearing habitat for the Slide Creek local population upstream to permanent natural barriers: Slide Creek from its confluence with the East Fork Jarbidge River upstream 7.3 km (4.6 mi); Gods Pocket Creek from its confluence with Slide Creek upstream 1.2 km (0.7 mi); an unnamed lower southern tributary from its confluence

with Slide Creek upstream 0.6 km (0.4 mi); and an unnamed upper southern tributary from its confluence with Slide Creek upstream 0.4 km (0.3 mi).



**Table 62. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Jarbidge River CHU/CHSU**

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Jarbidge River—None	Bruneau River	ID	Presumed occupied based on open access and current presence of bull trout in the Jarbidge River (USGS 2008).	Bruneau River (lower) is presumed occupied and is essential as it provides FMO habitat for the East Fork Jarbidge River, West Fork Jarbidge River, and other local populations.	1159358 429400
Jarbidge River—None	Cougar Creek	NV	Part of current distribution. Adult bull trout collected in 2007 (USGS 2008).	Cougar Creek is occupied and is essential as it provides spawning and rearing habitat for the East Fork Jarbidge River local population.	1153196 418401
Jarbidge River—None	Dave Creek	NV	Part of current distribution. Adult bull trout documented (USGS 2008).	Dave Creek (lower) is occupied and is essential as it provides FMO habitat for the Dave Creek local population.	1153518 419950.1
Jarbidge River—None	Dave Creek	NV	Part of current distribution. Adult (including spawners), juveniles, and fry bull trout collected or observed in 2006 and 2007 (USGS 2008).	Dave Creek (upper) is occupied and is essential as it provides spawning and rearing habitat for the Dave Creek local population.	1153518 419950.2
Jarbidge River—None	Deer Creek	NV	Part of the current distribution. Adult bull trout documented in 2000 (NDOW 2001) and in a prior year (J. Klott, BLM, in litt. 1994).	Deer Creek is occupied and is essential as it provides FMO habitat for the West Fork Jarbidge River and other local populations (e.g., Jack Creek, Pine Creek).	1154203 419330.1
Jarbidge River—None	Deer Creek	NV	Presumed occupied based on open access to and documented adult bull trout downstream in 2000 (NDOW 2001) and earlier (J. Klott, BLM, in litt. 1994).	Deer Creek (upper) is presumed occupied and is essential as it provides FMO habitat for the West Fork Jarbidge River and other local populations (e.g., Jack Creek, Pine Creek).	1154203 419330.2
Jarbidge River—None	East Fork Jarbidge River	ID	Part of current distribution. Tagged bull trout detected in 2007 (USGS 2008).	East Fork Jarbidge River (lower) is occupied and is essential as it provides FMO habitat for the East Fork Jarbidge River local population and other local populations.	1153901 420494.1
Jarbidge River—None	East Fork Jarbidge River	NV	Part of the current distribution. Adult bull trout collected in 2006 and 2007 (USGS 2008).	East Fork Jarbidge River (lower) is occupied and is essential as it provides FMO habitat for the East Fork Jarbidge River local population and other local populations.	1153901 420494.2

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Jarbidge River—None	East Fork Jarbidge River	NV	Part of the current distribution. Adult bull trout collected in 2006 and 2007 (USGS 2008).	East Fork Jarbidge River (upper) is occupied and is essential as it provides spawning and rearing habitat for the East Fork Jarbidge River local population.	1153901 420494.3
Jarbidge River—None	Fall Creek	NV	Part of current distribution. Adult and juvenile bull trout collected in 2006 and 2007 (USGS 2008).	Fall Creek is occupied and is essential as it provides spawning and rearing habitat for the East Fork Jarbidge River local population.	1153141 418564
Jarbidge River—None	Fox Creek	NV	Presumed occupied based on open access and current bull trout presence in W. Fork Jarbidge River (USGS 2008).	Fox Creek is presumed occupied and is essential as it provides FMO habitat for the West Fork Jarbidge River and Pine Creek local populations.	1154200 418265
Jarbidge River—None	Gods Pocket Creek	NV	Presumed occupied. Bull trout presence documented in Slide Creek near this tributary's mouth (Johnson 1993, 1996, 1999; NDOW 1993; Johnson and Weller 1994).	Gods Pocket Creek is presumed occupied and is essential as it provides spawning and rearing habitat for the Slide Creek local population.	1152924418 474
Jarbidge River—None	Jack Creek	NV	Part of the current distribution. Tagged bull trout documented (USGS 2008).	Jack Creek (lower) is occupied and is essential as it provides FMO habitat for the Jack Creek local population.	1154244 419118.1
Jarbidge River—None	Jack Creek	NV	Part of the current distribution. Adult and age-0 bull trout collected in 2006 and 2007 (USGS 2008).	Jack Creek (upper) is occupied and is essential as it provides spawning and rearing habitat for the Jack Creek local population.	1154244 419118.2
Jarbidge River—None	Jarbidge River	ID	Part of current distribution. Tagged bull trout detected in 2007 (USGS 2008).	Jarbidge River (mainstem) is occupied and is essential as it provides FMO habitat for the East Fork Jarbidge River, West Fork Jarbidge River, and other local populations.	1156515 423294
Jarbidge River—None	Jenny Creek	NV	Presumed occupied based on open access and current bull trout presence nearby in Jack Creek (USGS 2008).	Jenny Creek is presumed occupied and is essential as it provides FMO habitat for the Jack Creek local population.	1154095 419014
Jarbidge River—None	Pine Creek	NV	Part of the current distribution. Adult and age-0 bull trout collected in 2006 and 2007 (USGS 2008).	Pine Creek is occupied and is essential as it provides spawning and rearing habitat for the Pine Creek local population.	1154243 418336
Jarbidge River—None	Sawmill Creek	NV	Part of the current distribution. Johnson (1999) documented bull trout in 1998.	Sawmill Creek is occupied and is essential as it provides spawning and rearing habitat for the West Fork Jarbidge River local population.	1153993 417941

**Bull Trout Final Critical Habitat Justification**

U. S. Fish and Wildlife Service

September 2010

<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>
Jarbidge River–None	Slide Creek	NV	Part of current distribution. Adult bull trout, including spawners, collected or observed in 2006 and 2007 (USGS 2008).	Slide Creek is occupied and is essential as it provides spawning and rearing habitat for the Slide Creek local population.	1153116 418667
Jarbidge River–None	UNNAMED E Trib off Pine Creek	NV	Part of the current distribution. Juvenile bull trout documented in 1998 (Johnson 1999, Johnson and Haskins 2000).	Unnamed E Tributary to Pine Creek is occupied and is essential as it provides spawning and rearing habitat for the Pine Creek local population.	1154550 417858
Jarbidge River–None	UNNAMED Headwater Trib off East Fork Jarbidge R	NV	Part of current distribution. Juvenile and adult bull trout collected in 2007 (USGS 2008).	Unnamed Headwater Tributary to East Fork Jarbidge River is occupied and is essential as it provides spawning and rearing habitat for the East Fork Jarbidge River local population.	1153295 417820
Jarbidge River–None	UNNAMED Lower Trib off Fall Cr	NV	Part of current distribution. Juvenile and adult bull trout collected in 1998 (Johnson 1999).	Unnamed Lower Tributary to Fall Creek is occupied and is essential as it provides spawning and rearing habitat for the East Fork Jarbidge River local population.	1153275 418489
Jarbidge River–None	UNNAMED Lower Trib off Slide Cr	NV	Part of current distribution. Juvenile bull trout observed in 1999 (Werdon 2000).	Unnamed Lower Tributary to Slide Creek is occupied and is essential as it provides spawning and rearing habitat for the Slide Creek local population.	1152772 418393
Jarbidge River–None	UNNAMED Upper Trib off Fall Cr	NV	Part of current distribution. Juvenile and adult bull trout collected in 1998 (Johnson 1999).	Unnamed Upper Tributary to Fall Creek is occupied and is essential as it provides spawning and rearing habitat for the East Fork Jarbidge River local population.	1153349 418428
Jarbidge River–None	UNNAMED Upper Trib off Slide Cr	NV	Part of current distribution. Juvenile bull trout observed in 1993 (Johnson 1993, 1996, 1999; NDOW 1993; Johnson and Weller 1994).	Unnamed Upper Tributary to Slide Creek is occupied and is essential as it provides spawning and rearing habitat for the Slide Creek local population.	1152645 418380
Jarbidge River–None	UNNAMED W Trib off Pine Creek	NV	Part of the current distribution. Juvenile bull trout documented in 1998 (Johnson 1999, Johnson and Haskins 2000).	Unnamed W Tributary to Pine Creek is occupied and is essential as it provides spawning and rearing habitat for the Pine Creek local population.	1154472 418032
Jarbidge River–None	UNNAMED W Trib off West Fork Jarbidge R	NV	Part of the current distribution. Bull trout documented in 2006-2007 surveys (USGS 2008).	Unnamed W Tributary to West Fork Jarbidge River is occupied and is essential as it provides spawning and rearing habitat for the West Fork Jarbidge River local population.	1153970 417924

<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>
Jarbidge River—None	West Fork Jarbidge River	ID	Part of current distribution. Tagged bull trout detected in 2007 (USGS 2008).	West Fork Jarbidge River (lower) is occupied and is essential as it provides FMO habitat for the West Fork Jarbidge River local population and several other local populations.	1153900 420495.1
Jarbidge River—None	West Fork Jarbidge River	NV	Part of the current distribution. Adult bull trout collected in 2006 and 2007 (USGS 2008).	West Fork Jarbidge River (lower) is occupied and is essential as it provides FMO habitat for the West Fork Jarbidge River local population and several other local populations.	1153900 420495.2
Jarbidge River—None	West Fork Jarbidge River	NV	Part of the current distribution. Adult and age-0 bull trout collected in 2006 and 2007 (USGS 2008).	West Fork Jarbidge River (upper) is occupied and is essential as it provides spawning and rearing habitat for the West Fork Jarbidge River local population.	1153900 420495.3