

**Bumping Lake Enlargement**  
Summary  
**Bull trout and spotted owl habitat impacts**

Proposed Bumping Dam/Lake (Large Option- **No longer under consideration**)

**Reservoir capacity:** 458,000 acre feet

**Mapped spotted owl habitat inundated:** 1,753 acres

**Old growth habitat inundated:** 1,440 acres

**Extent of Deep Creek inundated (est.):** to about 0.25 mile below the Copper Creek confluence (2.13 river miles)

*(Note: Deep Creek is 5.1 miles in length from the lake to a natural barrier waterfall)*

**% of total BT redds located in inundation zone (last five years):** 76%

**% of total BT redds located in inundation zone (last four years):** 87%

*(Note: The Deep Creek BT population is one of the strongest in the basin, averaging 108 redds over the last five years- 145 in 2008)*

Proposed Bumping Dam/Lake (Smaller Option, 250 kaf)

**Reservoir capacity:** 250,000 acre feet

**Mapped spotted owl habitat inundated:** 1,097 acres

**Old growth habitat inundated:** 818 acres

**Extent of Deep Creek inundated (est.):** to about 0.1 mile above FS 1800 Road (1.03 river miles)

**% of total BT redds located in inundation zone (last five years):** ~30%

*The 30% figure above is my estimate. Deep Creek is divided into three redd survey reaches- the mouth to the FS 1800 Road, the road to Copper Creek, and Copper Creek to the barrier falls. Not until this year have we undertaken to obtain GPS coordinates on each redd. We know that over the last five years between 24 and 28 percent of the redds found in Deep Creek were below the road. The tenth of a mile above the road is excellent spawning habitat and always contains numerous redds. Actually my estimate that 30% of the Deep Creek bull trout redds occur from the mouth of the creek to 0.1 mile above the road may be a bit conservative.*

Proposed Bumping Dam/Lake (Smaller Option, 200 kaf)

**Reservoir capacity:** 200,000 acre feet

**Mapped spotted owl habitat inundated:** 952 acres

**Old growth habitat inundated:** 718 acres

**Extent of Deep Creek inundated (est.):** to about 0.27 mile below FS 1800 Road (.66 river miles)

**% of total BT redds located in inundation zone (last five years):** something less than 24%

*“Something less than 24%” is not very precise but it is the best I can do. Bull trout spawn in the entire 0.93 mile reach below the road except for the tenth of a mile or so that is backwatered where the creek enters the lake. The redds are not particularly clumped in any part of the reach. I would guess that the 200 kaf option would probably inundate something like 18-20 percent of the redds found annually in Deep Creek.*

Proposed Bumping Dam/Lake (Smaller Option, 150 kaf)

**Reservoir capacity:** 150,000 acre feet

**Mapped spotted owl habitat inundated:** 752 acres

**Old growth habitat inundated:** 531 acres

**Extent of Deep Creek inundated (est.):** to about 0.33 mile below FS 1800 Road (.60 river miles)

**% of total BT redds located in inundation zone (last five years):** would be less than the 200 kaf option but probably not much. The difference in the length of stream submerged between these two options is only .06 mile.

Proposed Bumping Dam/Lake (Smaller Option, 100 kaf)

**Reservoir capacity:** 100,000 acre feet

**Mapped spotted owl habitat inundated:** 635 acres

**Old growth habitat inundated:** 397 acres

**Extent of Deep Creek inundated (est.):** to about 0.47 mile below FS 1800 Road (.46 river miles)

**% of total BT redds located in inundation zone (last five years):** This option inundates about 0.2 mile less than the 200 kaf option or about half of the reach between the lake and the road. A simple estimate would be that it inundates about 12% of the redds found annually in Deep Creek.

### Deep Creek Bull Trout Redd Counts and Distribution (2004-2008)

Average number of redds = 108

Mouth to FS Road 1800		FS Road 1800 to Copper Ck		Copper Ck to Falls	
Year	# of Redds	Year	# of Redds	Year	# of Redds
2004	6	2004	16	2004	75
2005	32	2005	39	2005	2
2006	21	2006	51	2006	23
2007	26	2007	95	2007	9
2008	47	2008	75	2008	23
<b>Average</b>	26.4 <b>(24.4 %)</b>		55.2 <b>(51.1 %)</b>		26.4 <b>(24.4 %)</b>

### Deep Creek Distances (River Miles)

Mouth too FS Road 1800 culverts:	<b>0.93</b>
Culverts to Copper Creek:	<b>1.45</b>
Copper Creek to barrier falls:	<b>2.7</b>

87 percent of the redds were located from the mouth to Copper Creek from **2005-2008** (28% below FS road 1800 and 59% from the road crossing to Copper Creek). The majority of these were found in the braided channel section which begins about 0.25 mile above the road crossing and extends about another 0.25 mile upstream. About 0.5 mile above the road crossing in the main channel begins an area referred to as the "rock slide" which goes subsurface most years. Some bull trout get above this area but spawning habitat is limited until about 0.3 mile below Copper Creek. In dry years Deep Creek also experiences intermittent subsurface flow in the reach from Copper Creek to the barrier falls resulting in impassable conditions. It is likely that in many (if not most) years if the lower 1.1 miles of spawning habitat is lost (the 250 kaf enlargement option) a very large percentage of the bull trout which spawn in Deep Creek would be restricted to approximately 0.4 mile of the stream.

### **Bull Trout Redd Counts (Pop. Trends)**

Upper Yakima River

**8 total since 2000**

Teanaway River

**3 total since 2005**

Ahtanum Creek

**Average 31 (1999-2003)**

**Average 16 (2004-2008)**

Gold Creek

**Average 29 (1996-2003)**

**Average 16 (2004-2008)**

Box Canyon Creek

**Average 13 (1999-2003)**

**Average 9 (2004-2008)**

Upper Kachess River

**Average 15 (2000-2003)**

**Average 9 (2004-2008)**

Upper Cle Elum River

No redds ever found

Small number of juveniles and adults observed

Indian Creek

**Average 181 (1991-2000)**

**Average 94 (2001-2008)**

Crow Creek

**Average 14 (1999-2003)**

**Average 5.5 (2004-2008)**

Rattlesnake Creek

**Average 51 (1996-2003)**

**Average 27.5 (2004-2008)**

American River

**Average 31 (1996-2003)**

**Average 37 (2004-2008)**

S. Fork Tieton River

**Average 159 (1994-2003)**

**Average 198 (2004-2008)**

Deep Creek

**Average 82 (1991-2003)**

**Average 108 (2004-2008)**

\* The three populations listed in blue (including Deep Creek) are the only three in the Yakima Basin that have shown any increasing trend over the last five years.