



# **Colville National Forest Temperature and Bacteria Total Maximum Daily Load**

---

**Second addendum to the**

**Colville National Forest Temperature and Bacteria  
Total Maximum Daily Load Water Quality  
Implementation Plan**

## Background

In July 2016 the Environmental Protection Agency approved the Washington Department of Ecology's 2014 Water Quality Assessment 305(b) report and 303(d) list, submitted in September 2015. This list reflects what is known about water quality in Washington based on data submitted to Ecology before or during the 2010 request for data.

The Colville National Forest (CNF) TMDL and Implementation Plan (published in June 2005 and October 2006, respectively) addressed bacteria and temperature listings on the forest based on an earlier water quality assessment and 303(d) list. The list of streams covered by the TMDL now needs to be updated to match both Ecology's latest assessment and the results from the CNF's ongoing monitoring program.

## Bacteria

The 2014 assessment added Bestrom Creek and Wilson Creek to Category 4A for bacteria, meaning both streams are covered by the Colville National Forest Multiparameter TMDL. The forest service started monitoring for bacteria in Bestrom Creek in 2013 and it has consistently met state standards. Based on this data, it seems likely that the listing for Bestrom Creek will be changed to Category 1 (meets standards) after the 2016 water quality assessment (currently in-progress) is completed. The original listing was based on CNF monitoring data from 2001. The CNF has monitored Wilson Creek since 2012 and it exceeded the state's bacteria standard during all four seasons. Improvements need to be made along Wilson Creek to bring it up to standards.

South Fork Chewelah Creek, Cottonwood Creek (Colville watershed), Lost Creek, South Fork Mill Creek (Colville watershed), Lambert Creek and Smackout Creek remain in Category 4A. Of these, both Lambert Creek and Smackout Creek have consistently met standards since 2004 (Smackout was out of compliance in 2010 only) and it seems likely both will be moved to Category 1 after the next assessment. The high readings from Cottonwood Creek are probably due to natural conditions since no human sources are evident in the vicinity. A draft justification for reclassifying Cottonwood Creek as having naturally high fecal coliform levels was forwarded to Ecology's water quality standards unit in April 2016 for evaluation.

In addition, forest service monitoring data shows that Ruby Creek, West Fork Trout Creek at the 500 road, and Green Mountain Creek haven't met standards during all or most of the last several monitoring seasons. If this pattern continues, all three will probably be placed in Category 4A after the next assessment. Ruby Creek and West Fork Trout Creek are currently included in Category 1 based on monitoring data collected in the 1990's and early 2000's.

In September 2013 Ecology and the Colville National Forest adopted an addendum to the bacteria TMDL extending the deadline for meeting the fecal coliform standard from October 2013 until October 2018. This addendum covered all the streams currently listed in Category 4A plus several others which have yet to come into compliance with the bacteria standard, including Green Mountain Creek, Ruby Creek and West Fork Trout Creek at the 500 road. (See Table 1 of the September 2013 addendum) The 2014 assessment didn't add any streams to the TMDL beyond those included on Table

1. Therefore, all CNF streams listed in Category 4A on the 2014 water quality assessment will need to meet the state's bacteria standard by October 2018.

Table 1 from the 2013 addendum is attached for reference.

**TABLE 1**

<b>SITE</b>	<b>LOCATION</b>	<b>BOUNDARY or SOURCE SEARCH?</b>
<b>South Fork Mill Creek</b>	T36 R40 NE NW S24	Boundary
additional Mill Creek site (Bestrom Creek)	T36 R41 S20 SESW	Source search starting 2013
additional Mill Creek site (Green Mountain Creek)	T36 R41 S20 SESW	Source search starting 2013
<b>South Fork Chewelah Creek</b>	T33 R41 S23 NWSW	Boundary
<b>Wilson Creek</b>	T33 R41 S23 NENE	Boundary
<b>Cottonwood Creek (WRIA 59)</b>	T32 R42 SW NW S31	Boundary
additional Cottonwood Creek site (Cottonwood Below Betts Meadow)	T32 R45 S36 SWNE	Source search starting 2013
additional Cottonwood Creek site (East Branch Cottonwood Creek)	T32 R42 NE NW S31 NENW	Source search starting 2013
<b>Lost Creek</b>	T36 R43 S17 NW NE	Boundary (~ 0.7 miles above boundary at lowest FS road crossing)
additional Lost Creek site (Lost above Nile Lake)	T37 R42 S35 SWNW	Source search starting 2013
additional Lost Creek site (Lost below Nile Lake)	T36 R42 S02 NWNE	Source search starting 2013
<b>South Fork Lost Creek</b>	T36 R43 S30 SENE	Boundary (~ 1.5 miles above boundary at lowest FS road crossing)
<b>Ruby Creek</b>	T35 R43 S10 NESW	Boundary
additional Ruby Creek site (Middle Ruby Creek)	T35 R43 S08 SENE	Source search starting 2013
<b>Cottonwood Creek (WRIA 60)</b>	T40 R33 S33 NWNE	Boundary
<b>West Fork Trout Creek</b>	T38 R32 S33 NWNW	Boundary
additional WF Trout Creek site (WF Trout @ 500)	T38 R32 S35	Source search starting 2013

Since 2013, the CNF has added several sites to their monitoring network (see Table 2). Ecology will evaluate this new monitoring data during the 2016 water quality assessment. In the meantime, the forest service will look for ways to improve conditions along any streams where monitoring indicates impairment.

**TABLE 2: New Sampling Sites**

<b>SITE</b>	<b>LOCATION</b>	<b>PURPOSE</b>	<b>YEAR ADDED</b>
North Fork Mill Creek	T37 R40 S26 NE NW	Impairment determination	Added 2015
Middle Fork Mill Creek	T36 R40 S10 SW SE	Boundary	Added 2015
Snow Cap Creek	T38 R36 S3 SWNE	Impairment determination	Added 2015
South Fork Deadman Creek	T37 R37 S28 SWNE	Impairment determination	Added 2016
North Fork Deadman Creek	T37 R37 S28 SWNE	Impairment determination	Added 2016
Boulder Creek	T34 R36 S2 SWNW	Impairment determination	Added 2016
South Fork O'Brien Creek	T36 R33 S26 NWSE	Impairment determination	Added 2014
South Fork St. Peters Creek	T38 R34 S3 SENW	Impairment Boundary (also at the boundary)	Added 2014
Ninemile Creek	T35 R33 S11 SENW	Impairment determination	Added 2014
Lost Creek at 522 Rd	T36 R43 S7 NESW	Source Search	Added 2016
Middle Branch LeClerc Creek at 1935	T36 R44 S29 SWNE	Impairment determination	Added 2014
Middle Branch LeClerc Creek at 011 Rd	T36 R44 S15 SWSW	Impairment determination (also at the boundary)	Added 2015
West Branch LeClerc	T36 R44 S30 SWSE	Impairment determination	Added 2014
Skookum Creek	T33N R44E S15 NWSE	Impairment determination	Added 2015
Middle Fork Calispell Creek	T32N R42E S25 NESW	Impairment determination	Added 2015
Cusick Creek	T34 R43 S11 SWSW	Impairment determination (also at boundary)	Added 2015
Cedar Creek	T38 R42 S14 SE NE	Impairment determination (also at boundary)	Added 2016

# Temperature

The 2014 assessment added nine streams to Category 4A for temperature on the Colville National Forest. They are: Cottonwood Creek (Colville watershed), Harvey Creek, Lambert Creek and an unnamed tributary to Lambert Creek, Lone Ranch Creek, North Fork Sherman Creek, Small Creek, upper Sullivan Creek, and Winchester Creek.

Also, in December 2006, shortly after the TMDL Implementation Plan was completed, Ecology adopted a major revision to the state water quality standards including the temperature standard. The majority of streams within the borders of the Colville National Forest now need to stay at or below a seven day average daily maximum temperature (7DADM) of 16<sup>o</sup> C. The TMDL was written to meet the previous standard of an instantaneous reading of 16<sup>o</sup> C. The older standard is slightly stricter than the revised standard so meeting the shade targets specified in the TMDL should comply with the new standard as well.

The revised water quality standards also added a new criterion of a 7DADM of 12<sup>o</sup> C for waters categorized by the state as having the aquatic life use of char (bull trout) spawning and rearing. On the Colville National Forest, several streams included in Category 4A under the TMDL fall in this category: North Fork and Middle Fork Calispell Creek, Cedar Creek (Pend Oreille watershed), Harvey Creek, Indian Creek, East, Middle and West Branches of LeClerc Creek, Small Creek, Sullivan Creek (above the Outlet Creek confluence), Tacoma Creek and Winchester Creek. Ruby Creek, though not covered by the state's char standard, has been designated bull trout habitat by the USFWS and therefore may need to meet the colder temperature criterion to comply with federal requirements.

The modelling done for the temperature TMDL evaluated the shade needed to meet a standard of 16<sup>o</sup> C on streams across the forest; it did not evaluate the shade needed to meet the 12<sup>o</sup> C char standard. The 16<sup>o</sup> C shade allocations are listed in Table C-1 of the Water Quality Implementation Plan for the TMDL. All the streams designated for char on the CNF are in the Pend Oreille watershed. In general, the shade needed to achieve the 16<sup>o</sup> C target on the two Pend Oreille County ranger districts ranges from approximately 75% to approximately 85%. Site potential shade in this area varies from roughly 85% to 95% or more. For most streams on Table C-1, site potential shade is no more than 15% higher than the shade needed to meet a 16<sup>o</sup> C standard. In order to meet a target of 12<sup>o</sup> C, four degrees cooler than the earlier standard, it seems likely that shade will need to be increased on all char designated waters up to site potential levels. All riparian trees providing any shade/canopy cover over these waters should be left to grow. In some areas, planting additional trees may help speed recovery of riparian forests and help cool streams to natural levels.

**TABLE 3: Current Temperature Monitoring Sites**

<b>NAME</b>	<b>Latitude</b>	<b>Longitude</b>
Cee Cee Ah Creek	48.406943	-117.26
Cusick Creek	48.454537	-117.348
Chewelah Creek South Fork	48.344238	-117.608
Chewelah Creek North Fork	48.366583	-117.679
Mill Creek North Fork	48.684315	-117.728
Lane Creek	48.584024	-118.305
Hart Creek	48.592654	-118.328
Scatter Creek	48.54914	-118.791
Scatter Creek, Sheep	48.549144	-118.791
Thirteen Mile Creek	48.481659	-118.726
West Deer Creek	48.863638	-118.431
Matsen Creek	48.739327	-118.168
Big Sheep Creek	48.966007	-117.917
Big Sheep Creek, American	48.968664	-117.94
Pierre Creek	48.927151	-118.108
Ninemile Creek, South Fork	48.529436	-118.67
O'Brien Creek, South Fork	48.593136	-118.64
St Peters Creek, North Fork	48.785168	-118.529
Nine Mile Creek	48.542314	-118.634
Mill Creek, Middle Fork	48.627189	-117.751
Mill Creek, South Fork	48.611255	-117.713
Skookum Creek	48.362483	-117.231
Browns Lake Creek	48.404824	-117.259
East Deer Creek	48.85525	-118.224
Deadman Creek	48.678051	-118.245
Sherman Creek Above Growden	48.589705	-118.314
Sherman Creek Below Growden	48.581278	-118.299
Sherman Creek, South Fork	48.573014	-118.305
Boulder Creek, North Fork	48.818577	-118.218
Boulder Creek, South Fork	48.740164	-118.202
Cabin Creek	48.821095	-118.294
Ruby Creek	48.54753	-117.36
LeClerc Creek, West Branch	48.588244	-117.294
LeClerc Creek, Middle Branch	48.600502	-117.266
LeClerc Creek, East Branch	48.558788	-117.273
Cedar Creek	48.753693	-117.442
Calispell Creek, Middle Fork	48.249091	-117.431
Lost Creek	48.628658	-117.404
Trout Creek, W Fork@500rd	48.752098	-118.786
St Peters Creek, South Fork	48.762134	-118.536

## For more information

Jean Parodi  
Eastern Region Office  
WA Department of Ecology  
509-329-3517  
Email: [Jean.Parodi@ecy.wa.gov](mailto:Jean.Parodi@ecy.wa.gov)

*To request ADA accommodation including materials in a format for the visually impaired, call Water Quality Program at Ecology, 360-407-6600. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.*

