

# BCWA PINNACLE

Clear Creek County  
Jefferson County  
City of Lakewood  
Town of Morrison  
Aspen Park Metropolitan District  
Conifer Sanitation Association  
Denver Water Department  
Denver Parks & Recreation  
Evergreen Metropolitan District  
Forrest Hills Metropolitan District  
Genesee Water & Sanitation District  
Jefferson County School District  
Kittredge Sanitation & Water District  
West Jefferson County Metro District  
U.S. Army Corps of Engineers

**Illegal dumping of recreational vehicle wastewater or gray water has become an increasingly large problem in our watershed.** Offenders often dump late at night to avoid the cost and inconvenience of proper waste disposal. This type of dumping occurs at camp sites, other forest areas, parking lots, roadside ditches and into storm drains. Sometimes this wastewater gets into waterways and causes pollution problems. Several E. coli spikes on Turkey Creek last year may have been the result of this type of illegal dumping. This waste can affect drinking water supplies and cause costly cleanup efforts. If you see an illegal dumping of wastewater, call 911.

## Did you know that over 300 species of birds have been recorded for the Bear Creek Watershed?

The American Dipper (*Cinclus mexicanus*) is a year-round resident of the watershed and can be found along streams. It is usually seen bobbing up and down on a rock in mid-stream, or flying low over the water, following the winding course of a creek rather than taking overland shortcuts. Dippers are an indicator species and their presence along a stream generally indicates good water quality. Dippers feed on a wide range of aquatic insects, worms, snails and even small fish. Pollutants can diminish the “bug” populations and diversity in a section of stream. The BCWA monitors annually for macroinvertebrates (bugs) to determine stream health. The field monitoring team has observed Dippers along several stream reaches that get good macroinvertebrate scores, but rarely in stream reaches with low bug diversity scores. Several residents in the watershed have reported to the Association in recent years their observations of fewer Dippers.

Audubon scientists have used hundreds of thousands of citizen-science observations and sophisticated climate models to predict how birds like the Dipper will react to climate change. Audubon considers the Dipper as climate threatened. Dippers occur in winter as far upstream as there is open water; downstream, they don't like the water too warm. Audubon's climate model forecasts a dynamic climate future for the dipper, with only 12% of its current summer climate space remaining available by 2050 in our region of Colorado.

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## Climate Resilience Evaluation and Awareness Tool (CREAT) Model Predicts 6.12°F increase in average annual temperature in Middle Bear Creek Drainage and at Bear Creek Reservoir by 2050

CREAT (Climate Resilience Evaluation and Awareness Tool) provides climate projection data within a risk assessment framework to help the BCWA understand climate change, assess risks from climate-related threats and evaluate potential adaptation options for implementation.

Within CREAT, BCWA can assess consequences from climate-related threats that can impact watershed assets and management. CREAT defines benefits from implementing adaptation options to protect those assets and management alternatives, including providing cost savings for acting sooner, rather than later. There are some reasonable ways to minimize future impacts.

The CREAT model predicts the watershed between 2018 – 2050 will become significantly hotter on av-

erage with an increased potential for drier conditions. The model also predicts a 30% increase in large storm events like the 2013 floods. As with all climate modeling there is an understanding that future conditions can vary from predictions. However, planning for the expected changes of hotter, drier and stormier is a prudent water quality management strategy.

The results of a CREAT assessment provide information the BCWA can use for long-term watershed water quality planning processes. The BCWA is completing a modeling effort of the middle Bear Creek Watershed from Evergreen through lower Bear Creek. The BCWA will also develop a climate specific model for the Turkey Creek drainage. A report will be available in a few months for the Climate modeling.



[www.bearcreekwatershed.org](http://www.bearcreekwatershed.org)

**Bear Creek Watershed Association**

Russell Clayshulte, Manager

1529 South Telluride St.

Aurora, CO 80017-4333

Phone: 303-751-7144

E-mail: [rclayshulte@earthlink.net](mailto:rclayshulte@earthlink.net)



**Bear Creek through downtown Evergreen is showing significant water quality Stress.** The Colorado Multi-Matrix Index (MMI) Score for the 2018 Little Bear Site on Bear Creek in Evergreen came in at 29, which is well below the impaired limit of 42. This means the macroinvertebrate population (bugs) in this section of Bear Creek is not healthy and limits having a healthy fish population. The low MMI score indicates the Colorado designated aquatic life use is not attained at this site. This low score will likely result in Bear Creek below Evergreen Lake down to Kittredge being placed on the federal 303(d) list of impaired waters.

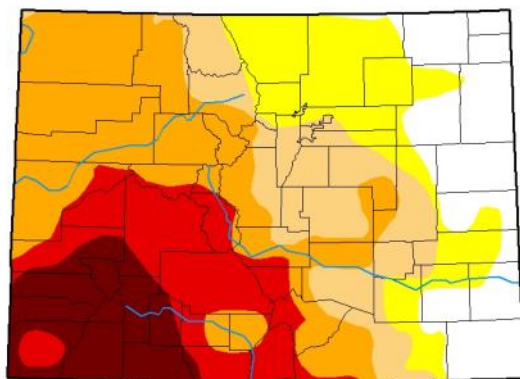
**This is a big problem and some correction will be needed to restore the health of Bear Creek through downtown Evergreen.**

One suspected impairment at Little Bear was potentially caused by parking lot sealing operations that were done just prior to the August sampling. The sealant used on the parking lot smelled like coal tar, which is known to degrade water quality and impair macroinvertebrates (BCWA PGO20 Coal Tar Concerns and Alternatives). Coal-tar-based sealant is a thick black liquid that is applied to many parking lots, driveways and road surfaces in the Bear Creek Watershed, including the Evergreen parking lot across from Little Bear. The sealant is used to protect against cracking, natural deterioration and water & snow-melt damage. A significant component of coal tar is polycyclic aromatic hydrocarbons, or PAHs. Some PAHs are highly toxic chemicals. They have known harmful impacts on humans and animals (terrestrial and aquatic). Bear Creek through Evergreen is also showing physical habitat stress with some degraded stream banks, and other streambed alterations.

After ice off, the BCWA will conduct a more detailed evaluation of this reach of Bear Creek. But the Association needs your help. We want to engage a larger group of interested watershed residents and businesses in Evergreen to help develop an action plan. Please email Russell Clayshulte at [rclayshulte@earthlink.net](mailto:rclayshulte@earthlink.net) to be part of the solution.

**U.S. Drought Monitor  
Colorado**

**January 15, 2019**  
(Released Thursday, Jan. 17, 2019)  
Valid 7 a.m. EST



**Intensity:**

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

**Author:**

Brad Pugh  
CPC/NOAA



<http://droughtmonitor.unl.edu/>

**Even with all the winter snows, do realize a large portion of Colorado is still under drought conditions.** The ice on Bear Creek Reservoir through mid-January was far less than normal with many areas having just 2 inches of ice. A warm December has kept the ice from developing. The current predictions are for warmer than normal conditions to persist in our region through the winter of 2019 and extend into 2020. The predictions on precipitation are better with a wetter than normal spring and near normal precipitation conditions through winter 2019. The Echo Lake SNOTEL station in the upper watershed is at 46% of the median peak snowpack.