



Baby elk session at Evergreen Lake area.

*The Bear Creek Watershed Association protects and restores water and environmental quality within the Bear Creek Watershed from the effects of land use.*

- Clear Creek County
- Jefferson County
- City of Lakewood
- Town of Morrison
- Aspen Park Metropolitan District
- Brook Forest Inn
- Conifer Sanitation Association
- Conifer Metropolitan District
- Denver Water Department
- Evergreen Metropolitan District
- Forrest Hills Metropolitan District
- Genesee Sanitation & Water District
- Geneva Glen
- Jefferson County School District
- Kittredge Water & Sanitation District
- The Fort Restaurant
- West Jefferson County Metropolitan District
- Evergreen Trout Unlimited
- U.S. Army Corps of Engineers

The Colorado Department of Parks and Wildlife completed fishery surveys at 7 sites in September 2014. The *BCWA TM 2014.14 Fish Survey BCW* provides summary graphs of the data results. No data was collected from the Morrison station due to excessive high water. The 2013 September flood event did impact the fishery, but CDPW fishery biologists expect a good recovery and they don't anticipate any long-term problems. The Rainbow Trout showed the most decline, while the Brown Trout number of fish per mile maintained a healthy population.

# BCWA PINNACLE

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## Bear Creek Watershed Association, Colorado

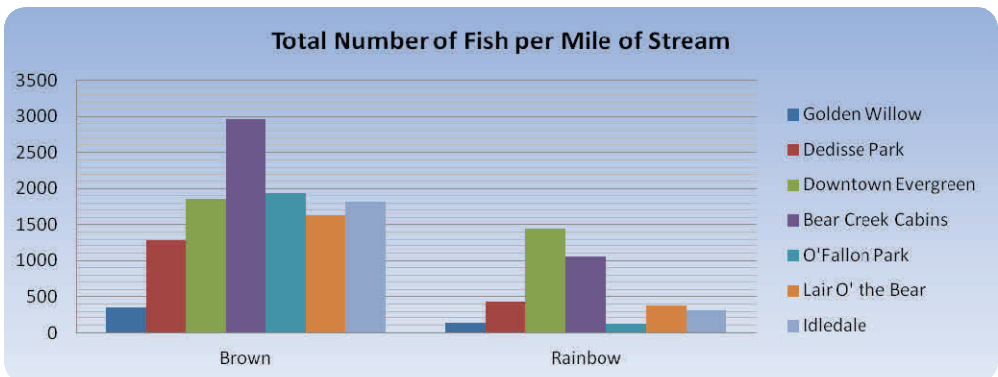
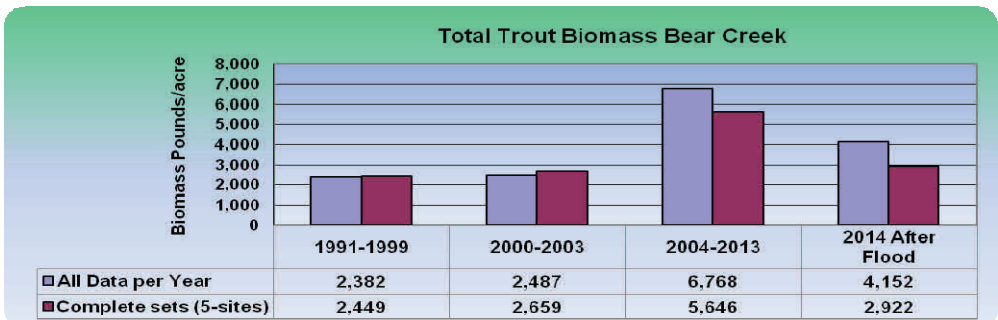
### Status Of Water Quality from the BCWA 2014 Annual Report

The total estimated annual discharge into Bear Creek Reservoir was about 32,940 acre-feet with about 26,345 acre-feet (80%) from Bear Creek and 6,595 acre-feet (20%) from Turkey Creek. The internal nutrient loading concern within Bear Creek Reservoir has not diminished over the last 7-years. The total phosphorus deposition into reservoir bottom sediments is over 12,500 pounds since 2008. The reservoir continues to experience late summer phytoplankton (algae) blooms which are linked to the internal nutrient loading problem. The BCWA has identified

some strategies to address the internal loading problem (*BCWA Policy 20 Preferred Management Strategies EGL and BCR*).

The total phosphorus load from the watershed comes from a combination of wastewater treatment plant point source loads, other point sources (e.g., onsite wastewater treatment systems), and nonpoint sources, including storm-water runoff. The estimated total phosphorus load in 2014 from all sources reaching the reservoir was 4,010 pounds (88% from Bear Creek). There was about 52,000 pounds of total nitrogen loading into the

reservoir with 85% derived from the Bear Creek drainage. The Association monitors watershed nutrients by major stream segments beginning near Mt. Evans (segment 7) and extending downstream to Bear Creek Reservoir. From a water quality perspective, the watershed showed good recovery from the September 2013 major flood event. The flood event caused a nutrient flush with most waterways having very low nutrient concentrations for about six-months following the event. In the 2014 monitoring season, the total phosphorus and total nitrogen concentrations and loads began to return to pre-flood conditions.





[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)

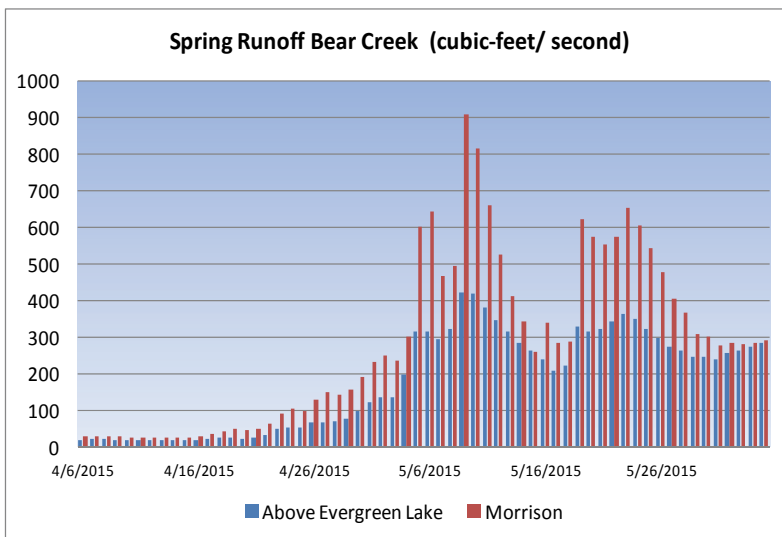
Burrowing Owl BCLP

**EL NIÑO/SOUTHERN OSCILLATION** is here and affecting Colorado weather patterns - Nearly all models predict El Niño to continue throughout 2015, and forecasters say it could grow substantially stronger in the coming months. El Niño refers to the episodic warming of ocean temperatures in central and eastern tropical Pacific, which has ripple effects in weather systems around the globe. For example, its presence tends to decrease Atlantic hurricane activity, while the tornado season is more active. Generally speaking El Niño brings:

- cooler & wetter weather to the southern United States, including Colorado, which can get unseasonably heavy rain events and more violent storms
- warmer weather to western Canada & southern Alaska
- drier weather to the Pacific Northwest
- cooler weather to northern Canada
- wetter weather to southern California

**BCWA Fact Sheet 49 Wetlands, Fens and Water Quality.** A type of tributary wetland in the wilderness portion of the watershed is called a fen. Near Mt. Evans, these wetland fens are an important and unique wetland type. They are ancient ecosystems estimated to be 8,000 to 12,000 years old. They “provide important headwater quality functions,” including carbon storage, water storage, wildlife habitat, and biodiversity. BCWA is studying the fen water quality.

Coal-tar-based sealant is a thick black liquid that is applied to many parking lots in the watershed to protect against cracking and water damage. A significant component of coal tar is polycyclic aromatic hydrocarbons, or PAHs. Some PAHs are highly toxic chemicals that have known harmful impacts on humans and animals and are suspected to cause cancer. Friction from vehicle tires wears down the sealant into small particles. These particles are washed off pavement by rain or snowmelt and carried down storm drains and into streams. If rain or snowmelt occurs before coal-tar sealant has dried, it washes into nearby water bodies, sometimes harming fish and other aquatic life. Other seal coat particles adhere to vehicle tires and are transported to other surfaces, blown off site by wind, or tracked indoors on the soles of shoes. Since preventing pollution is much easier than cleaning up after the fact, the BCWA recommends the discontinued or limited use of the practice of using coal-tar based sealants in the watershed. Next Issue - some alternatives



Bear Creek Reservoir is under flood conditions. The reservoir is once again being used to store excess runoff water and help regulate flows in the South Platte River. The maximum reservoir depth is now about 90 feet, when typically it would be about 45 feet. The heavy runoff and rainfall events will affect water quality in the reservoir.

Much of the western United States snowpack at measuring stations is at or near the lowest on record. Snow pack melted early across most of western Colorado. Months of unusually warm temperatures hindered snowpack growth and accelerated its melt. The one exception is northern Colorado. The snow pack in the Bear Creek Watershed was well above normal with a peak water equivalent of 270% of normal. The runoff in Bear Creek is substantially above normal with peak runoff flows exceeding 1,000 cfs (cubic-feet/ second).

