2014 Water Quality Assessment Submittal to EPA
4b Analysis for Couse Creek
September 2015

The Washington Department of Ecology (Ecology) Integrated Report (IR) proposes to exclude two listings from the 303(d) list and place these segments into category 4b. The specific listings are:

- Temperature—29318 and 29320

These water bodies were listed in category 4b of the 2012 IR. Ecology's basis for excluding these waterbodies from the 303(d) list is outlined in this evaluation.

Identification of Segment and Statement of Problem Causing Impairment

Couse Creek is located in Asotin County in southeastern Washington. The creek cuts through a deep canyon on its way to the Snake River. The plateaus above Couse Creek are farmed for wheat and barley, and the canyon is used for range and feeding livestock. Threatened Snake River Steelhead trout still return to Couse Creek each autumn.

Prior to 2001, livestock in the watershed had uncontrolled access to the creek, and were fed at several easy to reach locations along the stream. The riparian corridor was degraded. Trampling and overgrazing had damaged or removed many of the trees and shrubs along the stream corridor. This degraded riparian area could not provide shade to the stream, resulting in high water temperatures.

This is a sparsely populated area. There are no towns in the watershed and no point sources of pollution.

Monitoring data for these two segments was collected by the Washington Department of Fish and Wildlife, and covers the years 2000 through 2002. For segment 29318, data show that the highest daily temperature occurred in 2001. For that year, the 7-day mean of maximum daily temperature was 21.1 degrees Centigrade, and the maximum daily temperature was 23.4 degrees Centigrade from continuous measurements. For segment 29320, the highest temperatures occurred in 2000. For that year, the 7-day mean of maximum daily temperature was 23.3 degrees Centigrade, with a maximum daily temperature of 24.8 degrees Centigrade from continuous measurements.

Description of Pollution Controls and How They Will Achieve Water Quality Standards

Water Quality Target

The designated uses for the two impaired segments are spawning, rearing and migration, and the temperature criterion is 17.5 degrees Centigrade. In addition, the segments have a supplemental spawning criterion of 13 degrees Centigrade from February 15 to June 1.

Controls that will achieve water quality standards

The Department of Ecology's Eastern Regional Office has established a Livestock and Water Quality Program that uses a unique collaborative approach to address livestock-related problems. Instead of using the standard process that starts with a Category 5 listing, establishing a TMDL for the stream, writing an implementation plan, and finally getting to actual implementation, this strategy goes straight to implementation. The strategy is applied in watersheds in which the cause of a water quality impairment is clear.

Ecology encourages implementation of a wide variety of best management practices, however, a primary focus of the program has been to restore degraded riparian corridors and eliminate unlimited animal access to streams. Healthy riparian areas can improve water quality and stream health in multiple ways, which make them a particularly valuable and cost-effective management practice. Healthy riparian areas

- Slow bank erosion by holding soil in place during periods of high water.
- Reduce flood damage and sedimentation by slowing runoff and capturing the sediment that would otherwise be carried downstream.
- Help keep water cool in summer by shading the stream.
- Improve water quality by capturing sediment, nutrients, pesticides, pathogens, and other pollutants before they reach the stream.
- Enhance summer stream flow by improving water infiltration and storage.
- Create fish and wildlife habitat.
- Limit livestock manure inputs to the creek and riparian areas.

Ecology has a three-step riparian restoration strategy, which allows the department to efficiently apply resources to priority problem areas. The first step is to address the source of degradation – unlimited livestock access to streams and winter feeding operations in close proximity to the riparian corridor. Ecology relies primarily on livestock exclusion, and off-stream water supply to restrict livestock access to the riparian area. In implementing this BMP, Ecology uses NRCS riparian buffer standards, which require a minimum 35 buffer between the livestock fence and the mean ordinary high water mark of the nearest stream bank. In many cases, the buffer width may be larger depending on the stream and site conditions.

By first addressing livestock access, Ecology seeks to abate the primary pollution sources—livestock in the stream, eroded stream banks, increased runoff, increased sedimentation, and subsequent transport of fecal matter. As vegetation naturally returns in the riparian area, site conditions become stabilized and the pollution sources are dramatically reduced. Also, this approach works to arrest morphological changes to the entire stream that are induced by erosion and sedimentation.

Ecology has spent much of its efforts and resources implementing this first step, in large part, because we have taken a holistic, watershed approach to protecting streams. By first addressing the primary sources of pollution and geomorphic change, Ecology can establish the necessary site conditions for successful restoration. Moreover, Ecology

ensures that, first and foremost, the root problems are addressed for *the entire stream*, before resources are focused on site or segment specific restoration.

The second step occurs after a majority of site conditions have been stabilized, and the stream's entire geomorphic integrity is no longer jeopardized by the adjacent management practices. Ecology then conducts a reach by reach assessment to determine the appropriate trees and shrubs to be used for restoration. In some cases federal programs require revegetation as part of the cost-share program, and so restoration work occurs simultaneously with livestock exclusion.

The third step is to work with local land owners to promote continuous and proper management of upland grazing lands.

Ecology teams with conservation districts, local governments, and landowners to provide technical assistance and funding for implementation of best management practices. Ecology uses a traditional regulatory process only when collaborative efforts fail. Chapter 90.48 RCW gives Ecology the authority to take enforcement actions against nonpoint polluters.

The result of these partnerships has been the implementation of best management practices at hundreds of sites where water quality and fish habitat issues exist. By using a collaborative strategy, backed up by enforcement when necessary, Ecology has been able to create relationships and build trust with rural residents while improving water quality.

In the Couse Creek watershed, work with landowners began in 2002. Eight miles of riparian buffers were installed. The creek was fenced to protect it from livestock, and off-stream water was provided at several key points. Thousands of native trees and shrubs were planted in the stream corridor. Buffers are constructed using Natural Resource Conservation Service standards, which require a minimum width of 35 feet. For buffers installed with state or federal financial assistance, we require an agreement with the landowner stipulating that the buffer and fence will be maintained for at least 10 years.

In addition, farmers in the upper watershed are currently adopting new tillage practices and installing sediment basins. All of these efforts will help address the temperature impairments. Initial cattle exclusion fencing was generally installed adjacent to or upstream of the impaired segments. However, we have also fenced portions of the stream and tributaries where there are presently no Category 5 listings, but where there was unrestricted cattle access to the stream.

Riparian buffers are left to revegetate naturally in those areas in which there is enough live native vegetation left to recover. In all other areas we are installing buffers by planting native plants. We expect the planting to continue for a few seasons to ensure all buffers are adequate and healthy. As of 2006, all cattle in the watershed have been fenced out of the stream.

The Couse Creek watershed continues to recover. Since 2006, many riparian areas have been placed into the Conservation Reserve Enhancement Program, which requires maintenance of riparian plantings. Ecology has completed additional planting to increase riparian vegetation. In addition, Ecology has been encouraging landowners to implement direct seed technology through the use of state Centennial and federal 319 grant funds; and Bonneville Power Administration Direct Seed Cost-share.

Changes to the watershed are obvious. Trees and shrubs are now growing in the riparian area, and the channel is more defined and stable, with more consistent surface flow. There are Steelhead trout in the creek. Landowners are noticing the changes, too. One Couse Creek landowner told Ecology, "Since we implemented these projects we have stands of grass I have never seen before. The stream corridor looks healthier than it did three years ago."

Description of requirements under which pollution controls will be implemented
It is Ecology's best professional judgment that the pollution controls that have been installed will result in the water quality standards being met. Maintenance of these controls has been ensured through 10-year landowner agreements that were established as part of the funding agreements for these projects.

Estimate or Projection of Time When Water Quality Standards Will be Met

It will take time for the riparian corridor to fully recover and for the stream to re-establish its natural geometry. Ecology estimates that the riparian buffers will have grown enough to be fully effective in 10 years, so Couse Creek will be meeting the temperature standard throughout the entire watershed by 2017.

Schedule for Implementing Pollution Controls

As described earlier in this report, Ecology has worked with the conservation district, local governments, and landowners to implement a variety of best management practices in the Couse Creek watershed. It is our best professional judgment that this work will remedy the pollution problems in the impaired segments. Because it is our intention to restore the entire watershed and to prevent future pollution problems, we will be using monitoring data to track water quality improvements and to identify any new problem areas so they can be addressed. It will be an on-going process to get water bodies into compliance and to keep them in compliance. Ecology's Livestock and Water Quality Program will continue to have an on-going presence in the watershed, and will continue working to achieve compliance with state water quality standards.

Monitoring Plan to Track Effectiveness of Pollution Controls

Ecology has collected temperature data for the creek, but it has not yet been analyzed to determine whether the creek is achieving compliance with water quality standards. Ecology plans to perform additional monitoring for the next few years to assess progress and to determine whether more work is needed in the watershed. Monitoring data can

also help to identify additional problem areas that should be addressed. Monitoring results will be reported to the public and EPA through Ecology's IR report development process.

Commitment to Revise Pollution Controls as Necessary

Ecology will maintain a presence in the Couse Creek watershed to ensure that water quality continues to improve. We fully expect the Eastern Regional Office livestock and water quality program to achieve compliance with water quality standards. However, if it does not, Ecology will work with the conservation district, local governments, and landowners to determine other controls that could be used to achieve compliance.