



# STATE OF NEVADA

Department of Conservation & Natural Resources

DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor

Leo M. Drozdoff, P.E., Director

Colleen Cripps, Ph.D., Administrator

December 6, 2012

Mike L. Baughman, Ph.D.  
Executive Director  
Humboldt River Basin Water Authority  
c/o Intertech Services Corporation  
P.O. Box 2008  
Carson City, NV 89702

Dear Dr. Baughman,

Thank you for the comments from the Humboldt River Basin Water Authority (HRBWA) on Nevada's Draft 2008-10 Integrated Report (IR). The Nevada Division of Environmental Protection (NDEP) acknowledges HRBWA's concerns regarding the aquatic life temperature standards, data or lack thereof and other factors related to the inclusion of Beaver Creek, Cabin Creek, Maggie Creek, Pearl Creek, and Robinson Creek in Category 5 (303(d) List) of the Draft IR. Specific responses to your comments are provided in the Enclosure to this letter. As explained, NDEP will include these waterbodies on the Final 2008-10 303(d) List.

It must be emphasized that NDEP considers the IR/303(d) List to be a planning tool. The HRBWA concerns about temperature listings on the 2006 and 2008-10 303(d) Lists were responsible in part for NDEP's decision to review the aquatic life temperature standards and initiate a detailed temperature monitoring program in summer 2012. NDEP looks forward to working with the HRBWA as we proceed with the standards review.

NDEP's final 2008-10 IR has been submitted to the U.S. Environmental Protection Agency for approval and is available at <http://ndep.nv.gov/bwqp/303dlist.htm>. Please contact me at (775) 687-9449 if you have any questions or would like to further discuss these matters.

Sincerely,

John O. Heggeness, Supervisor  
Water Quality Standards and Monitoring  
Bureau of Water Quality Planning

Cc: Kathy Sertic, Chief, Bureau of Water Quality Planning  
Enclosure

## ENCLOSURE

Humboldt River Basin Water Authority  
c/o Intertech Services Corporation  
P.O. Box 2008  
Carson City, Nevada 89702

Elko County  
Eureka County  
Humboldt County  
Lander County  
Pershing Count

May 3, 2012

Mr. John Heggeness  
Nevada Division of Environmental Protection  
Bureau of Water Quality Planning  
901 S. Stewart Street  
Carson City, Nevada 89701

RE: Comments to the DRAFT Nevada's 2008-10 Water Quality Integrated Report

Dear Mr. Heggeness:

On behalf of the Humboldt River Basin Water Authority (HRBWA) I am providing the following comments to the DRAFT Nevada's 2008-10 Water Quality Integrated Report. As noted in the Authority's March 24, 2008 comments to the Nevada Draft 2006 303(d) Impaired Waters List, HRBWA continues to be concerned that water bodies within the Humboldt River Basin are being listed as impaired for not meeting the temperature standard for aquatic life (specifically trout) when in fact most, if not all of these listed water bodies have viable trout populations. While the Authority commends NDEP for utilizing a binomial method of assessing data in the current report, which the Authority agrees should provide a more statistically valid assessment.

As we have discussed with you in the past, the problem with inappropriate listing of waters based upon the temperature standard for trout is likely more a problem with the standard itself, in that the existing standard fails to reflect the behavior of trout in streams which move to shady areas and locations under cut banks and boulders during the heat of the day or when stream temperatures in unshaded water exceed the current temperature standard for trout. This explains why, despite streams not meeting the temperature standard, viable populations of trout exist in such streams. HRBWA encourages NDEP to take appropriate steps to evaluate the appropriateness of the current temperature standard for trout and to revise same prior to publication of the next 303(d) impaired waters list.

**NDEP Response:**

**NDEP acknowledges HRBWA's concerns regarding the aquatic life temperature criteria and has initiated a detailed review of the existing standards. Phase I entailed the deployment of more than 90 temperature monitoring devices in select streams throughout northern Nevada during summer 2012. The information obtained from this effort will be utilized to characterize the spatial variability of temperature within a given stream, and to develop appropriate monitoring protocols for evaluating the temperature standards. The temperature standards review/revision process is expected to take 3-4 years to complete.**

The Authority is specifically concerned that the following waterbodies may have been inappropriately added to the proposed 2008-10 impaired waters list only because of failure to meet the water temperature standard for trout:

Beaver Creek (NV04-NF-75\_00; NV04-NF-76\_00)  
Cabin Creek (NV04-NF-142\_00)  
Maggie Creek (NV04-HR-27-C\_00)  
Pearl Creek (NV04-SF-113\_00)  
Robinson Creek (NV04-SF-116\_00)

**NDEP Response:**

**As stated above, the temperature standards review/revision process is expected to take 3-4 years to complete. Until that time, NDEP must use the existing standards to develop the Integrated Report (IR) and 303(d) List of Impaired Waters. Therefore, NDEP will include the above mentioned streams in Category 5 (303(d) List) of the Final 2008-10 IR.**

HRBWA continues to be concerned with the extent to which determinations of impaired waters fully consider whether water quality data is collected during extreme events. As noted on Page 18 of the draft report, "The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow... 7Q10<sub>high</sub> and 7Q10<sub>low</sub> values as developed by USGS were used to establish the extreme flow conditions. Data from extreme high and low flow events are excluded from the data set used to determine listing." (NAC 445A.121(8)) The report goes on to indicate that "...no data evaluated for the 2008-10 Integrated Report were identified as being associated with 7Q10 flows; and therefore, no data were excluded for this reason." It should be noted that USGS determined 7Q10 flows are not the only natural parameter to be applied under NAC 445A.121(8). In fact, any "natural conditions of the receiving water" should be considered when determining whether the standards have been violated.

**NDEP Response:**

**Rarely are streamflow data available making it difficult to impossible to determine if flows were below the 7Q10 low threshold during the data collection period. The lack of streamflow data is not deemed a reason for not listing a waterbody. It could be justification to collect additional data/information prior to pursuing other actions, such as total maximum daily load (TMDL) development.**

**There were several years for which the submitted temperature data were not used due to obvious anomalies in the data. In a number of instances, temperatures varied erratically**

**throughout the day suggesting that the thermograph was exposed to the air. These data were not used in the listing analyses.**

HRBWA has previously reviewed NDEP provided data for listing of water bodies within the Humboldt River Basin as not meeting the temperature standard for trout and has concluded that while periods of extreme high or low flow ... 7Q10<sub>high</sub> and 7Q10<sub>low</sub> values as developed by USGS may not have been occurring during water temperature data collection, other factors indicative of natural stream conditions were in many cases in play as follows:

1. Virtually (if not) all temperature exceedance occurred during the summer months when higher daytime temperatures naturally occur.
2. Most (if not all) temperature exceedance occurred between the hours of 1:30pm. and 4:30pm., naturally the hottest time of the day.

**NDEP Response:**

**The temperature standards represent daily maximums. Therefore in terms of compliance with water quality standards, NDEP's concerns are the daily highs that occur during the hottest time of the day, particularly during summer afternoons.**

In addition, the following observations are made by HRBWA with regard to the validity of using the aforementioned stream flow data to base decisions to include the streams on the draft 2008-10 303(d) list:

1. No stream flow data appears to have been available to NDEP upon which to determine whether the streams were under "extreme events", such as drought.

**NDEP Response:**

**As stated above, rarely are streamflow data available making it difficult to impossible to determine if flows were below the 7Q10 low threshold during the data collection period. The lack of streamflow data is not deemed a reason for not listing a waterbody.**

2. No air temperature data appears to have been available to NDEP upon which to determine whether temperature were abnormally high during the times in which water temperature data were collected and exceedance observed.

**NDEP Response:**

**Air temperature data is rarely available. However, lack of air temperature data is not deemed a reason for not listing a waterbody.**

3. Descriptions of sampling locations describing site conditions (i.e. sun or shade; pool or riffle; probe depth; bottom composition; immediate upstream conditions; etc.) do not appear to have been available to NDEP.

**NDEP Response:**

**NDEP recognizes that temperatures can vary considerably over a stream reach and that temperatures measured at one point may or may not be representative of overall conditions.**

**However exceedances at one point (whether a pool or riffle) are considered sufficient for listing purposes.**

4. It is not clear whether the parties collecting the data or sampling activities undertaken were subject to any quality assurance/quality control measures to guarantee the integrity of the collected data.

**NDEP Response:**

**The data used to list the above mentioned streams was collected by the Bureau of Land Management Elko District Office which has a quality assurance/quality control plan in place for its sampling activities.**

In summary, given the limitations in data collection, it does not appear possible to determine with any certainty whether the observed water temperatures which led to inclusion of the above-listed water bodies on the impaired waters list were simply natural conditions outside of the established limits. In preparing future 303(d) reports, NDEP is encouraged to require collection of data necessary to consider factors contributing to natural stream conditions in addition to whether the data were collected during extreme high or low flow... 7Q10<sub>high</sub> and 7Q10<sub>low</sub> events as determined by USGS. The Humboldt River Basin has been in a long period of drought and this natural condition does not appear to have been adequately considered when evaluating the water quality data available to NDEP.

**NDEP Response:**

**Temperature standard exceedances may be the result of natural conditions or human impacts. The extensive investigations that would be needed to sort out the specific causes are far beyond the intent of the 303(d) List. NDEP uses the 303(d) List as a planning tool. Before any action is taken, such as TMDL development, NDEP would conduct extensive monitoring and assessment to confirm the causes and that any human-caused conditions could be addressed under the authorities of the Clean Water Act. It must be emphasized that NDEP has no authority to affect water rights and water usage.**

HRBWA encourages NDEP to reconsider its listing of the aforementioned waterbodies as Impaired Waters in the Draft 2008-10 Water Quality Integrated Report. Additional data is needed over a longer period of time and which account for air temperature and drought conditions in order to reach defensible conclusions regarding the extent to which the above-listed streams are impaired from a water temperature perspective. HRBWA continues to be committed to working with NDEP, and other private concerns and state and federal agencies which are collecting water temperature data to identify high-priority streams for long-term monitoring.

**NDEP Response:**

**As justified above, NDEP will include the aforementioned waterbodies in Category 5 of the Final 2008-10 Integrated Report. NDEP acknowledges that additional information would be useful, particularly for confirming a waterbody's temperature impairment status prior to developing any TMDLs. However, average temperature and precipitation conditions are not necessarily the targeted conditions for sampling and standards compliance. The standards are intended to serve as a threshold during non-extreme events whether these events are low summer flows or high spring runoff. NDEP has initiated a detailed study of the temperature criteria and looks forward to working with the HRBWA to further this effort.**

Sincerely,

Mike L. Baughman, Ph.D.  
Executive Director

Cc: Board Members and Alternates, Humboldt River Basin Water Authority