



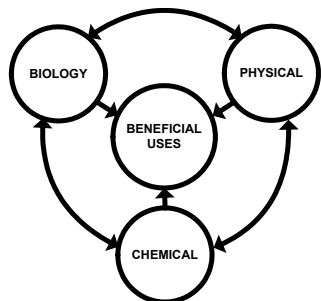
Carson River Watershed Assessment

A report card on the health of the Carson River watershed and its aquatic life

Introduction

In support of their Clean Water Act responsibilities, the Nevada Division of Environmental Protection (NDEP) is developing a Carson River Watershed Assessment or Report Card. Drawing upon numerous studies and monitoring efforts, this Report Card will provide a compilation of current knowledge about the chemical, physical, and biological health of the Carson River watershed with a focus on aquatic life uses from the stateline to Lahontan Reservoir. An accurate characterization of these 3 health factors are an essential foundation for future efforts within the basin.

The Clean Water Act and Nevada

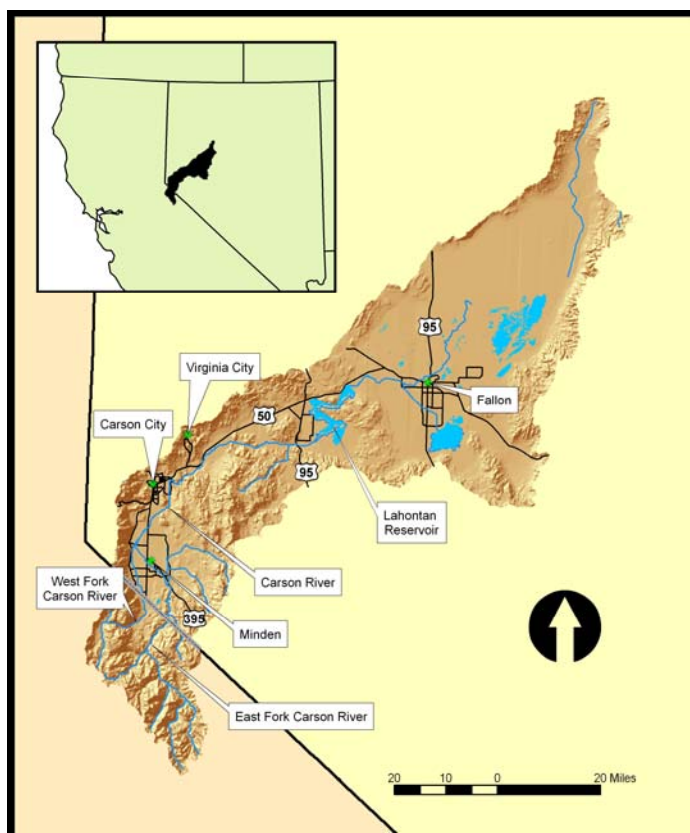


The objective of the federal Clean Water Act (CWA) is "... to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." With this objective, the CWA recognizes that chemical, physical and biological conditions in a water body all affect its associated beneficial uses. Until recent years, states

(including Nevada) had tended to focus primarily on the water chemistry component. This approach had worked well for dealing with most point source discharges but has not worked quite so well for other use impairment sources such as nonpoint (diffuse) source pollution and habitat modifications. Recognizing this shortcoming, many states have developed detailed protocols for considering chemical, physical and biological conditions for assessing system health. Nevada is in the process of developing the tools needed for these types of integrated assessments.

Section 303(d) of the Clean Water Act (CWA) requires states to develop a list of water bodies needing additional work beyond existing controls to achieve and maintain water quality standards. This list, referred to as the Section 303(d) List, is the basis for targeting waterbodies for watershed-based solutions, such as the development and implementation of Total Maximum Daily Loads (TMDLs).

The goal of a TMDL is to determine the amount (or load) of a pollutant that a water body can receive and still meet its water quality standards and support its beneficial uses. In Nevada, TMDLs are implemented through discharge permits (for point sources) and voluntary nonpoint source control projects.



Carson Watershed and 303(d) List

Nevada's 2002 303(d) List identifies a number of pollutants of concern for the Carson River basin. The main pollutants of concern include: nutrients, sediment, temperature and metals. In the State regulations, this beneficial use is further defined to include lists of fish species of concern: rainbow and brown trout in the upper reaches, and catfish, channel catfish, walleye, smallmouth bass, and white bass in the lower reaches.

"to preserve and enhance the environment of the state in order to protect public health, sustain healthy ecosystems and contribute to a vibrant economy" - NDEP's mission statement

As with most of the 303(d) Listings throughout the state, the Carson listings are based primarily upon exceedances of water quality criteria set for the protection of the "propagation of aquatic life". For future 303(d) Lists, Nevada hopes to have more holistic assessment methodologies which integrate chemical, physical and biological conditions. One goal of the Report Card is to evaluate the appropriateness of the 303(d) Listings on the Carson River. As part of this evaluation, NDEP will be assessing the appropriateness of the aquatic life beneficial use definitions and the associated water quality criteria.

Project Development

The intent of the watershed assessment or report card is to present a comprehensive characterization of the past and current health of the Carson River and its aquatic life from a Clean Water Act perspective. The main topics to be included in the Report Card Report include:

- **History and Background:** Discusses the history of water quality regulations, aquatic life in the river, land use, river condition, etc.
- **Beneficial Use Needs and Criteria Evaluation:** Characterizes the chemical, physical and biological conditions needed for the aquatic life beneficial uses. Also, evaluates the numeric water quality standards currently set for the aquatic life beneficial uses.
- **Existing Conditions:** Characterizes the current knowledge on the chemical, physical and biological conditions of the river.
- **Use Impairment:** Evaluates current chemical, physical and biological conditions against the beneficial use needs to determine impairment levels. Also, characterizes (timing, extent, magnitude, load, location, etc.) the source of use impairment to the extent possible including differentiation between natural and human-induced causes.
- **Recommendations for Future Actions:** Presents recommendations for future work potentially related to: beneficial uses, standards revisions, existing conditions, impairment characterization, impairment source characterization, TMDL development, etc.

In developing the Report Card, BWQP will draw upon numerous past, current and future studies, and monitoring and research efforts undertaken by a variety of entities. Some of the key projects include:

- Sources of Phosphorus to the Carson River—USGS (near completion)
- Characterization of Turbidity and Total Suspended Solids Levels and Loads in Upper Carson River—DRI (underway)
- Carson River Nutrient and Dissolved Oxygen Assessment—DRI (underway)
- Development of Indices of Biological Integrity (proposed)

- Alpine County Watershed Assessment (completed)
- Water quality, physical habitat/conditions, biological monitoring by variety of groups (underway)
- Temperature Impairment Characterization and Modeling Project—DRI (underway)
- BLM's Carson River Geomorphology Study (underway)
- Use of Light Detection and Ranging (LiDAR) laser survey to map detailed physical characterization of river channels, extent of riparian vegetation, and surface water temperatures (underway)

It is hoped that the Report Card will be a valuable tool for educating the public, agencies and decisionmakers on the state of the river, thereby providing direction for their future actions and decisions. The Report Card will also be a key planning tool for NDEP in scoping out future steps in the watershed.

During the project, input, information and data will be solicited from other agencies, stakeholders, and other interested parties. Comments on the project design and the report contents will be sought throughout the process.

Project Timeline

It is anticipated that a Draft Report Card will be available for public comment by mid-2007. Interim products will be available prior to the release of the Draft Report Card.

For More Information

To find out more about this project or to provide input, contact:

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Available publications can be found on the web at:

<http://ndep.nv.gov/bwqp/special01.htm>