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The Clean Water Act and Nonpoint Source Pollution: Implications for Nevada Agriculture Water Issues Education Series – No. 2

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Introduction

Nevada is the driest state in the nation. Total average annual precipitation is approximately nine inches per year. Surface water in Nevada is limited and provides approximately 60 percent of the state's total water supply. The remaining 40 percent of water supplies are provided by ground water. Some areas in Nevada depend upon ground water supplies for 100 percent of their water.

Over the past few decades there has been a significant increase in litigation surrounding western water resources, including Nevada's watersheds. Agriculture has been named as a defendant in several cases. Those involved in agriculture need to acknowledge that water, a primary input in the production process, has become a highly valued and increasingly scarce resource. And, federal legislation prioritizes the improvement and protection of water quality involving water resources nationwide.

Farmers and ranchers must understand water issues surrounding agricultural activities and social concerns involving water bodies located near their operations.

The first step in accomplishing this level of awareness is to understand federal and state laws regulating water quality, implementation of laws and pollutants identified as harmful to water bodies. This fact sheet explains the provisions outlined in the Clean Water Act that specifically address nonpoint source pollution and implications for agriculture.

The Clean Water Act

The Clean Water Act (CWA) regulates water quality for the U.S. pertaining to surface waters such as rivers, streams and lakes as well as groundwater, wetlands, and urban runoff. Originally the CWA focused on point sources of water pollution but was amended in 1987 to provide for nonpoint source (NPS) pollution control.

Point sources of pollution are identifiable, confined means for transporting and discharging pollutants, such as channels, ditches, conduits and tunnels. Municipal treatment facilities, manufacturing industries and large animal confinement operations are examples of potential point sources of pollution. In contrast, NPS pollution is the scattered discharge of natural and manmade pollutants into the natural environment. As defined by the CWA, NPS pollution derives from diffuse, unregulated sources that typically include agriculture, urban and construction runoff over large areas. And, a defining feature of NPS pollution is that runoff contains pollutant materials that enter surface waters or ground water at rates greater than naturally occurring levels.

Water quality experts suggest that agricultural activity is a leading contributor to NPS pollution. Types of agricultural sources include:

- cropland,
- feedlots,
- irrigation and drainage,
- livestock grazing,
- modifications of river/stream channels,
- construction, and
- livestock waste management.

The United States Environmental Protection Agency (EPA) is the authority appointed to implement CWA legislation. For the greater majority of Nevada, the Nevada Division of Environmental Protection (NDEP) implements provisions of the CWA focusing on the area that lies outside of its four designated wastewater management areas surrounding the urbanized areas of Carson City, Lake Tahoe Basin, Truckee Meadows and Washoe and Clark Counties.

Of particular interest to farmers and ranchers, are Sections 303 and 319 of the CWA. Section 303 requires states to establish water quality standards based on beneficial uses for a given water segment as well as existing information pertaining to that segment. Waters that do not meet established standards are placed on a list (Section 303 (d) list) of impaired, threatened waters. States must then assure that numeric limits are established for the individual pollutants impairing listed waters and that these limits are not exceeded. The established limits are referred to as Total Maximum Daily Loads (TMDLs). Section 319 of the CWA supports planning and education efforts to control NPS at the watershed level. It requires each state to develop a NPS Management Plan to improve the quality of impaired or threatened waters. In Nevada, NPS water management activities are primarily voluntary at this time, rather than regulatory, and emphasize education to raise public awareness and voluntary participation to improve water quality.

Understanding Beneficial Use

Beneficial use refers to water use that produces gains or benefits. In Nevada, beneficial uses historically include agricultural usage, such as irrigation and livestock watering. In addition to agricultural uses, beneficial uses currently include:

- recreation,
- support of aquatic life, wildlife propagation,
- municipal drinking supply and
- industrial uses.

The amount of pollutants necessary to impair beneficial use depends on the existing or designated use of the waters in question. For example, streams used for human drinking supplies require stricter standards than water used to irrigate crops.

Beneficial use must be consistent with federal and state law and are based on the following factors:

- historical use,
- existing use,
- anticipated water use,
- public concerns, and
- requirements to prevent water quality deterioration.

Water quality standards require that appropriate water uses be specified, achieved and protected. The use and value of the water body must be identified in terms of its use as public water supply, recreational, industrial and agricultural purposes as well as to protect fish and wildlife.

When beneficial usage or water quality standards are established or revised in Nevada, the Nevada Environmental Commission must review and formally accept the proposed revisions. The commission represents several state agencies including Forestry, Mining, Agriculture, Health, Wildlife, and State Water Engineer. Additionally, the Governor appoints four citizen members who further address issues concerning agriculture, economic development, mining, and the environment. Nevada Division Environmental Protection provides public hearings to inform citizens of established or revised standards that are site specific to a water body. Citizens may comment at that time, either in writing or in person. Based on federal and state requirements, available water quality monitoring data, and public comment, the commission may decide to amend, adopt, or take no action concerning changes to established standards.

At this point, if dissatisfied with the commission's proposed decision, citizens may file a petition to review the procedures used by NDEP to establish or revise standards. The review is conducted and a

judge of the State Supreme Court decides the outcome.

The public has a vested interest in the quality of our Nation's surface waters. The Clean Water Act requires States and authorized Tribes to hold public hearings on their water quality standards at least once every three years. Public hearings on water quality standards provide an opportunity for the public to become involved in the water quality standards setting process. Citizens may make recommendations on improvements or modifications in the standards during the public hearing process. Public hearings are a powerful vehicle through which citizens may make their concerns known to public officials.

Monitoring Water Quality

Originally, EPA was charged to regulate only point sources of water pollution. However, in 1987, the CWA was reauthorized to include effective NPS pollution control and water quality management programs nationwide. Currently, all states, including Nevada, are directed by EPA to:

- monitor water bodies to assess NPS pollution,
- develop a statewide control program for NPS pollution, and
- implement Best Management Practices as means for pollution control.

Due to its diffuse nature, it is difficult to measure NPS pollution. In order to identify water bodies that are not in compliance with water quality standards, NDEP maintains a program that monitors over 100 sampling points in Nevada's 14 hydrographic regions and, every two years, provides a 303(d) list of impaired or threatened waters.

In addition to these monitoring stations, intensive field studies of water quality are conducted on Nevada's major water systems including the:

- Carson River,
- Colorado River Tributaries,
- Humboldt River,
- Truckee River, and
- Walker River.

Conclusions

NPS pollution is the scattered discharge of natural and manmade pollutants into the natural environment. As defined by the CWA, NPS pollution derives from diffuse, unregulated sources that typically include agriculture, urban and construction runoff. Water quality experts suggest that agricultural activity is a leading contributor to NPS pollution. Types of agricultural NPS may include: cropland, feedlots, irrigation and drainage, livestock grazing, changes to river and stream channels, construction, and waste management.

Due to its diffuse nature, it is difficult to take precise measurements of NPS pollution. In accordance with the CWA, Nevada has established water quality standards based on beneficial uses for its water bodies. NDEP maintains a program that monitors over 100 sampling points in Nevada's 14 hydrographic regions and, every two years, provides a 303(d) list of impaired or threatened waters. Each state is required to address listed waters by establishing TMDLs to specify measurable limits for individual pollutants and plan for pollution control of NPS at the watershed level.

Farmers and ranchers must learn about federal policy affecting water resource management, NPS and maintain an awareness of agricultural activities that could potentially impact water quality. The first step in accomplishing this is to learn about federal and state laws regulating water quality and NPS programs in place to improve water quality controlling specifically for NPS pollutants. Next, Best management Practices must be identified and implemented to control for potential NPS associated with agricultural activity.

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