

CATTLEMAN'S INFORMATION GUIDE to WATER QUALITY

**Produced by the
NATIONAL CATTLEMEN'S BEEF ASSOCIATION**

JULY 1998

**The following Guide is for information purposes only and does not
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**The Cattleman's Information Guide to Water Quality is produced by
the Natural Resources Subcommittee
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CATTLEMAN'S INFORMATION GUIDE TO WATER QUALITY

TABLE OF CONTENTS

Introduction

- Scope
- Acknowledgments

Section A. The Cattleman's Role in Water Quality Management

- Water Quality Laws Affecting Cattle Production
- Water Rights and Cattle Operations
- Opportunities for Involvement
- Summary of State Water Quality Mechanisms, 1996

Section B. At the Ranch, Farm, or Feedlot

- Water Quality Management
- Acquiring Information
- Developing a Management Strategy
- Recognizing Existing or Implementing New Management Practices
- Monitoring
- Feedlots

Section C. Beyond the Ranch

- Watersheds
- Watershed Management
- Vested Rights
- Policy Involvement

Section D. Getting Help

- Technical Assistance
- Watershed Management
- Legislation/Regulation/Programs
- Financial Assistance
- Legal Assistance
- Financial Assistance
- Our Own Resources
- Web Sites

Section E. Appendix

1. Glossary

2. Water Laws

Federal Laws

- Federal Water Pollution Control Act (Clean Water Act)
- Coastal Zone Management Act Reauthorization Amendments
- Safe Drinking Water Act
- Federal Agriculture Improvement and Reform Act (1996 Farm Bill)
- Endangered Species Act
- Other Related Acts

State Water Laws

- Water Rights
- State Water Quality Laws
- State Water Quality Programs

Trends

3. Resource Lists

- a. State Cattle Associations
- b. EPA Washington and Regional Offices
- c. USDA Water Quality Program
- d. Other Federal
- e. Legal Foundations
- f. Certified Professionals/Professional Societies

INTRODUCTION

The National Cattlemen's Association (NCA) initiated a Water Quality Information Program in 1992 as a positive action of their Strategic Plan. This program was under the direction of the Private Lands and Environmental Management Committee. An initial report produced in 1995 summarized the Environmental Protection Agency's water quality assessment information, federal agency roles, and listed several examples of state water quality programs. A major finding of this report was that although national attention is focused on Congress and EPA for legislation and regulation, **it is at the state level that the water quality programs are implemented, and more importantly, the application of site specific management practices are carried out at the farm, feedlot and ranch level.**

In early 1995, a survey of the State Associations (with 34 responses), was conducted for the Water Quality Information Program by Denver staff. The results emphasized the diversity among states in terms of staffing, interests in water quality as an issue, and what they need. A grant proposal for funding from the Environmental Protection Agency was prepared and approved to assist in developing ways to provide water quality information to members and state affiliates. A Task Force of NCBA members, State Association staff, and NCBA staff was formed to provide direction to the development of this information. The Task Force decided upon this Water Quality Information Guide to encourage producers to be involved with water quality, provide guidelines for this involvement, and let others know of the industry's commitment to addressing environmental issues. The Task Force also encouraged the use of NCBA's resources to assist with water quality management information delivery as a component of the efforts of the Property Rights and Environmental Management Committee.

Scope of the Information Guide

The Guide is organized to provide information for involvement at the cattle operation level, watershed management level, with policy formation and in the legal arena. It also includes sources for help and lists of additional resources available. **Caution is given to those with vested rights to retain legal and management control on their own property and when participating in watershed programs.**

This Guide provides a summary of resource materials for the beef production industry. The Guide is targeted to state/local beef cattle organizations and the individual beef cattle producers. Many organizations and agencies, at both the federal and state levels, have more detailed information available to the beef cattle operator. **The individual is encouraged to utilize local resources.**

The Guide is not a comprehensive answer to all water quality management questions, but rather a starting point to understanding the issue and providing information for action by the beef cattle producer. Environmental management for water quality protection must recognize the uniqueness of resource sites. General and generic practices can be offered as **examples** for water quality management. This Guide is designed to provide information to beef cattle producers. **It is not implied to offer a remedy for site specific situations, nor does it establish specific industry standards.**

Acknowledgments

Our thanks to the Environmental Protection Agency for their grant which partially supported the preparation and publication of this Guide. Recognition is given to the assistance of staff from several state affiliates who have already developed their own information sources on water quality management. Much of the material summarized in this Guide is drawn from Environmental Protection Agency and US Department of Agriculture publications. The Know Your Watershed program of the Conservation Technology Information Center was very helpful providing information relating to watershed management. Experiences with programs in California, Florida, Texas, and Washington were helpful in providing additional background materials.

Special appreciation goes to the 1995 Task Force members who volunteered leadership in developing the outline of this Guide, to past and present Chairs of the Property Rights and Environmental Management Committee, and to NCBA staff who supported these efforts.

SECTION A. THE CATTLEMEN'S ROLE IN WATER QUALITY

Water supply and vested rights have and will continue to be a concern to the cattle producer. Today, water quality is an issue of ever increasing importance to the agricultural industry. The maintaining or enhancement of water quality has been a major component of U.S. environmental policy since the passage of the Federal Water Pollution Control Act of 1972 (known as the Clean Water Act). Since 1972, and in some cases prior to that date, all fifty states have established statutes governing the protection of water quality. All of society's activities, whether water or land based are now regulated in some form. Regulations also encompass agricultural activities including rangeland, pasture and feedlots.

Water Quality Laws Affecting Cattle Production

Federal laws important to cattle producers are the Federal Water Pollution Control Act of 1972 (Clean Water Act); Coastal Zone Management Act Reauthorization Amendments; and the Safe Drinking Water Act. The federal Environmental Protection Agency oversees three programs - The Comprehensive State Ground Water Protection Program, National Estuary Program, and the Clean Lakes Program all with water quality components. Additional requirements apply to federal rangelands leased to producers by the U.S. Forest Service and Bureau of Land Management. Congress, at some time in the future, may amend these and other Federal laws to levy additional requirements and regulations on livestock producers. See Appendix 2 for a summary of key water quality laws impacting agriculture.

A majority of states have passed laws or instituted programs that regulate water quality directly or indirectly by regulating some aspect of production that is associated with an agricultural nonpoint source. Some of these laws are in response to Federal laws such as the Clean Water Act. States use a variety of approaches for addressing water quality problems: controls on inputs or practices, controls on land use, economic incentives, and education programs. Eighteen states require the implementation of practices to control soil erosion and a growing number of states are requiring nutrient management programs. In most, best management practices (BMPs) are required if a complaint is filed by a citizen or government agency. See Table 1 for a summary of state water quality mechanisms applicable to agriculture.

The Clean Water Act categorizes water quality in two types - point and nonpoint source. Point source is an observable, specific, and confined discharge of pollutants into a water body. Factories, sewage treatment plants, confined animal feeding operations, and food-processing plants are examples of activities defined as point sources. Nonpoint sources are from widely dispersed land areas and may occur naturally. It can be difficult to easily pinpoint exactly where nonpoint source runoff may be originating. Agriculture, forestry, mining and urban storm water are examples of nonpoint sources.

Section 305(b) of the Clean Water Act (CWA) requires that states report to the U.S. EPA every two years on the quality of their assessed surface waters, sources of impairments, and contaminants. Section 303(d) is now being used to identify waters of special concerns requiring action through the use of Total Maximum Daily Loads (TMDL) and determining ways to meet these standards.

In recent years, third party intervention and lawsuits have resulted in much litigation and substantial fines under the Clean Water and Endangered Species Acts. In several states the initiative process is being viewed as a way to place regulatory management constraints on landowners.

Water Rights and Cattle Operations

Livestock require a constant supply of water of reliable quality. Cattlemen in the United States own, preserve, and enhance rights to surface, ground and stored waters and provide waters of excellent quality both for their livestock operations and for others.

Water rights are recognized property rights in all states, although each state may have statutes particular to that state or region. In general, Eastern states embrace the riparian doctrine of water rights; Western states use both riparian and appropriative doctrines; and Midwestern states have additionally developed the correlative doctrine of ground water rights. Common definitions of water rights are given in Appendix 2; however, each person is advised to refer to their state water laws and individual legal advisor.

Opportunities for Involvement

When National Cattlemen's Association (NCA) presented its Strategic Plan for the Environment in 1992, it focused on voluntary action on the part of the cattle producer. This is still the primary drive behind this Guide, providing you with guidelines to be involved. However, the situation today more often requires action on your part to address water quality. **The point that you, as the land and resource manager, are in the best position to determine just how you manage to meet the required goals and standards set by laws and regulations continues to be emphasized.** Your involvement, and the gaining of an understanding of water quality issues is vitally important to address the growing national emphasis on the control and reduction of both point source and nonpoint sources associated with beef cattle production and agriculture in general. Inaction appears to be a luxury that cannot be afforded to stay in business.

Livestock owners and managers should first find out what laws and ordinances are being used in your area that relate to water quality and watershed management. Then you should identify committees, working groups and projects that might be developing water quality requirements and management approaches that will impact any kind of livestock operations. A recommended level of action is a management strategy for your beef cattle operation (Section B). The next level is to consider involvement in watershed management programs (Section C).

Feedlots and other confined animal feeding operations are under intense scrutiny because of potential odors, surface and groundwater degradation, wildlife impacts, and an increase in nuisance complaints. Currently those feedlots in excess of 1,000-head capacity or 300 head and discharging into a stream, are considered a point source and are subject to the federal National Pollution Discharge Elimination System (NPDES) permit or a state implemented equivalent permit. Such permits include the implementation of certain pollution control measures. While this permitting does not usually constitute voluntary actions, there is still a certain amount of voluntary discretion left to the feedlot manager. This is especially true for those feedlots less than 1,000-head capacity. Involvement in pollution control activities and or documentation of such activities is critical for all feeding operations, regardless of size, if the industry desires to minimize future regulatory activities.

While addressing these management activities, there is a need to be involved in policy formation within industry organizations and in the governmental process. It may be necessary to also be involved in legal processes. When it comes to water quality, there appears to be no end of “opportunities to be involved.”

Table 1. Summary of State Water Quality Mechanisms, 1996

State	Nutrient plan requirement	Restrictions on			Cost- share	Farm "A" Syst ²
		Pesti- cide	Chemi- -gation	Sedi- ment		
Alabama					X	
Arizona	X	X			X	
Arkansas						X
California		X				
Colorado	X		X			
Connecticut	X			X	X	
Delaware				X	X	
Florida	X	X	X	X	X	X
Georgia			X		X	
Hawaii			X	X		
Idaho	X		X	X	X	
Illinois			X	X	X	X
Indiana					X	
Iowa		X	X	X	X	
Kansas			X		X	X
Kentucky	X					X
Maine				X		
Maryland	X	X		X	X	
Michigan	X			X		X
Minnesota	X		X	X	X	X
Mississippi					X	
Missouri					X	X
Montana				X	X	X
Nebraska	X		X		X	
Nevada			X			
New Hampshire			X			
New Jersey		X			X	
New Mexico						X
New York			X			
North Carolina			X		X	
North Dakota			X			X
Ohio				X	X	
Oklahoma	X			X	X	
Oregon						X
Pennsylvania	X			X	X	
Rhode Island						
South Carolina			X		X	
South Dakota			X	X	X	X
Texas	X	X			X	X
Utah					X	
Vermont	X					
Virginia	X	X			X	X
Washington			X			
Wisconsin	X	X	X	X	X	X
Wyoming	X			X		

¹Mechanisms may apply only under certain conditions or in certain localities. ²Farmstead Assessment System helps farmers, ranchers, and rural residents to evaluate pollution risks on their properties and to identify remedial actions. FROM: USDA, ERS Ag Handbook 712, page 2732w

SECTION B - BACK AT THE RANCH, FARM, OR FEEDLOT

Water Quality Management

Many cattle operators have developed management strategies and have a management plan. Too often these plans are kept in the mind rather than in written form that can be used as documentation. In addition to these private management plans, other programs are available such as the NCBA Integrated Resource Management (IRM) program, Holistic Management, USDA Natural Resource Conservation Service plans including efforts under the Grazing Lands Conservation Initiative, plans developed through state extension educational programs, Coordinated Resource Management and other independent approaches. Water quality management activities should be a part of these approaches, if not they can be added to your existing strategy. This section will focus on what one can do if starting out fresh.

A plan itself can take many forms; usually it can be a strategy described on paper, detail and length dependent upon the individual, or has been something that one has kept in their head. Five basic components comprise a water quality plan: 1) acquiring information, 2) developing a management strategy for the ranch, farm, or feedlot, 3) recognizing or implementing practices, 4) monitoring, and 5) adjustment of practices based upon monitoring results.

Acquiring Information

Acquiring information may include an inventory of resources that describe what type of soils, livestock, climate, water sources, etc. are found on the ranch, farm or feedlot. An identification of the water rights and beneficial uses of water on lands being assessed is helpful. This includes an identification of whether or not nonpoint source runoff may be occurring on the ranch. Also consideration of external factors such as other uses and users in the watershed, and the historic activities that influence current conditions are important. With this exercise you may actually find that no nonpoint source pollution is originating from your ranch. If this is the case, you should document such non-generation.

Nonpoint sources on range and pasturelands may exist in areas of grazing, roads, facilities, construction activities, mining, recreational activities, and natural processes. The five pollution considerations associated with beef cattle production are sediment, heat, nutrients, pathogens, and pesticides.

***Documentation of past and current conditions will be necessary
if cattle production methods are challenged.***

Sediment: Sediment is traditionally caused from erosion. Erosion is a natural process that may be accelerated or reduced by land use activities. Soil erosion and sedimentation are considered a contributor to lowered water quality from rangeland and pastures. Sources of sediment may be divided into upland (sheet and rill), gully, and streambank. Roads and other areas of disturbed ground such as corrals can be contributors of sediment to rivers and lakes.

Heat: Thermal pollution has two basic sources related to grazing and livestock production. Grazing can alter streamside vegetation that shades streams and helps to maintain cool water temperatures required by many cold water fisheries. Drainage of irrigation water can contribute to higher temperatures of cold water streams.

Nutrients: Leaching of nutrients from watersheds is a natural part of nutrient cycling. Nutrients can become pollutants, particularly near streams and lakes during the rainy season or periods of runoff. Nutrient problems are usually most critical where animals congregate. Nitrate and phosphate are usually the nutrients of concern. Pasture fertilization can be a source of these and other nutrients.

Pathogens: Localized contamination of surface water, ground water, and the soil itself can result from animals in pastures and rangelands. Although fecal coliforms themselves are not pathogenic, they indicate that pathogens could exist and possibly flourish. Fecal streptococci may also be a reliable and definitive measure of human or animal pollution. Pathogens are an impairment of increasing concern, especially *Giardia* and *Cryptosporidium*, and their possible impairments to drinking water quality.

Pesticides: Though pesticides are typically a pollutant of concern in farming, they can on rare occasions be associated with rangeland or feeding operations. Pesticide usage is articulated by label restrictions.

Developing a Management Strategy -

After reviewing the information acquired in the step above, it is time to sit down with the involved family or partners to describe what you would like to have happen (set goals and objectives) and decide how you want to get there. These can be simple or complex depending upon how you want to proceed. Specific management targets can be incorporated in the strategy; i.e. nutrient management, fish and wildlife habitat, weed control and fuel reduction.

Recognizing Existing or Implementing New Management Practices -

Management practices, as defined for water quality protection, can be any practices or methods that suitably address the goal of maintaining or enhancing the beneficial uses of water. In selecting which management practices to use, the overall management objective of the ranch must be taken into consideration and should compliment the land use activity currently taking place. These practices may come from established range/pasture management and engineering approaches or from the landowner's own initiative and experience. Most practices can be divided into four categories: livestock management, structural improvements, land treatment, and livestock health. Examples of practices, which may or may not be applicable for site specific situations, include those encompassing such topics as grazing management, water development, fencing, structures, vegetation management, manure management and herd health regimes.

The diversity of range and pasture resources and types of livestock operations in the United States make it impossible to set specific standards and specifications for these practices at the national, regional, or even state level. **Management guidelines must be established at the most local level possible.**

Monitoring -

Monitoring is necessary to quantify if water quality objectives are being met by management practices that have been implemented.

Monitoring should be done to:

1. Document current status/condition of waterbodies, riparian area and upland vegetation.
2. Document off-site uses and unplanned disturbances (fire, floods, drought, insects, freezes, etc.) that influence water quality.
3. Document implementation of management strategies and/or management practices,
4. Measure the effectiveness of management practices over time (trend) for use in an adaptive process where monitoring may indicate a need for management changes to meet desired objectives (plan, implement, monitor, adjust).

The most simple and least costly (in time and money) methods need to be identified for each of the above types of monitoring. Systematic use of photographs and recording of observations can provide the least expensive and most effective documentation for waterbodies, vegetation status/condition, and practice effectiveness. The use of historic photos and diaries help describe past conditions and changes that have occurred over time. **The key to monitoring success is consistency of measurements and a commitment to long-term monitoring.**

FEEDLOTS

Many of the points discussed concerning rangeland such as pollutants (sediment, nutrients, and pathogens) and the planning processes used to address pollution prevention and control are applicable to feedlots. The major pollutant, however, for feedlots is livestock waste, and the goal is to prevent such waste from entering surface or ground waters. As previously indicated, those feedlots in excess of 1,000-head capacity or which have 300-head and discharge into a stream are required to be permitted under provisions within the Clean Water Act.

Along with nutrient management techniques, example management practices for feedlots can be broken down into general categories:

Diversion – Use of dikes or other means to divert runoff from entry into the feedlot.

Containment – Controlling of feedlot runoff by detention of liquid wastes in ponds or lagoons.

Solid Waste Management – Periodic removal of solid wastes in order to prevent build-up.

Disposal – Disposal of solid or liquid wastes through application to land at agronomic rates or other environmentally sound means.

Nuisance Control – Those practices that control nuisances such as dust, odors and flies associated with confined animal production. These practices not only can avoid potential complaints and lawsuits from neighbors, but often provide health benefits to the cattle as well.

Monitoring and documentation of actions being taken by the feedlot manager are often conditions of a permit if the feedlot is permitted. For those facilities that are not permitted, proper documentation of practices being implemented is strongly encouraged and can assist in avoiding future regulatory burdens.

The Environmental Protection Agency, Bureau of Land Management, NRCS and State Extension Service all have materials providing information on monitoring approaches for cattle operations whether confined or grazing on rangelands and pastures. See Sections D and E for information sources.

SECTION C. BEYOND THE RANCH, FARM OR FEEDLOT

The cattle operation will not be the only point of involvement for the cattle producer. Two major opportunities for further involvement are with “watershed management” and water quality policy. Watershed management will be your involvement with other interests in a specific watershed, while with water quality policy it can be your involvement with local, state, and national industry groups.

Water quality management is keyed to watersheds. Watershed management as the means to improve water quality is a major policy focus for national agencies, a growing number of state agencies, and with a number of independent programs. Cattle operations require land, which often make them a substantial portion of a watershed.

Water quality policy is represented by state and federal legislation and the regulations and activities of government agencies. Your State Association and the National Cattlemen’s Beef Association are in place to deal with legislation and agency relationships, but both need the involvement of producers to conduct their business.

Watersheds

Water is a resource that is not constrained by property lines. In considering water movement, the hydrologist talks of the watershed - the area of land that catches, stores and releases rain or snow to a marsh, stream, river, lake or groundwater. We all live in a watershed, work in a watershed, and play in a watershed. What we and others do on the land impacts the quantity and quality of water, and our other natural resources. These watersheds can be as large as major drainage into lakes, rivers, bays and estuaries or they can be small as drainage into a stock pond or small stream. We all have a different perception of what a "watershed" could be, depending upon our experiences and geography. **It should never be assumed that livestock grazing may be the only or the major source of water quality impairment simply by its presence.**

The US Geological Survey has established a nationwide system of delineating watersheds based on surface hydrologic features. The system starts by dividing the country into 21 regions, then splits down to 2,149 cataloguing units. With each level using 2 digits going up to 14 digits which pinpoints many streams and reaches of streams or rivers. You can use this system or go to your local NRCS office to locate your “watershed address” (the watershed(s) with which you are involved.)

It is important to know which watershed(s) your cattle operation contain or are a part, and what the major watershed and water quality issues are. Also keep in mind the local, state and regional governmental institutions and how they relate to water quality efforts.
Watershed Management

The Environmental Protection Agency has implemented a Watershed Protection Approach as a means to address nonpoint source pollution. Many states are now following this approach.

A producer's interest in management of watersheds will depend upon such things as adequate water for the ranch or farm, major land uses on the property, the downstream uses of the water, the concerns of agencies and neighbors and identified water quality impairments. Watershed Management is not new. There have been major national programs within USDA and other agencies for decades. Most of these programs have focused on water yield, flood control and erosion. Now, Watershed Management has gained importance in dealing with nonpoint source and point source water quality.

"Watershed Management" can involve multiple water sources and land uses within a defined watershed. This can require the participation of many interests in seeking solutions to address management goals, including water quality. Too often it is the agencies and non-agricultural interests that identify problems or raise concerns. Interests that are based on uses of large tracts of land, such as agriculture and forestry, are often left out of the initial picture except to be blamed for the problems. **Taking the initiative in providing leadership in the formation of these projects or at least becoming an active participant in the early stages helps direct efforts in a more acceptable manner.** There are many examples of cattle producers providing this leadership.

There are numerous approaches to handling watershed management already functioning around the nation. There are many conferences, workshops, educational materials and popular articles devoted to the topic of watershed management. Many producers are now involved with these programs. Information and experiences are not the limiting factor. **The key is effective understanding and action on the part of producers.**

Watershed groups have been fostered in many locations to address pollution in lakes, bays and estuaries. The Chesapeake Bay, Great Lakes and the National Estuaries Program are examples of longer-term programs. USDA's Water Quality Initiative included 16 Demonstrations and 74 Hydrologic Unit Area programs which involve groups working together. In the western states, Coordinated Resource Management, is an active approach often involving both public and private land resources.

Watershed groups take many forms from simple agreements among neighbors to those that involve large-scale areas with numerous landowners, land uses, agencies, and water supply entities. There are Coordinated Management Agreements, USDA projects, EPA projects, Conservancies, Compacts, and watershed management agreements, to name a few approaches. Finding the one to fit any one situation is often an initial challenge.

Examples and details of watershed programs can be found in a number of databases such as the agriculturally based “Know Your Watershed Program”, the Environmental Protection Agency, most state water agencies or the Land Grant Universities. Your state association and NCBA have knowledge of many programs or at least can provide ideas of where to start looking. Contacting any of these programs will provide knowledge of success, failures, ways to get started and an opportunity to share information. The “Know Your Watershed” program also has materials geared to agricultural groups to help form watershed groups (see Section D).

Your Vested Rights

Participation in watershed management programs is not without risk to the producer. Vested land and water rights are often on the line to meet the “public good”. As you participate in developing watershed plans, help the group understand your concern for these vested rights and how this concern might impact the desired objectives of the planning process. You may wish to seek legal council assistance to maintain control over these rights. **Managing control over your rights is one of the most important considerations for landowner participation in water quality management planning.**

Policy Involvement

Laws and regulations are an expression of policy. Agricultural organizations function on policy established by the membership. Participating in the process of development and implementation of policy is critical to your operation’s future. One step is to become involved with your local, state and national cattlemen’s, or other agricultural organizations as they form their policy on dealing with government or other issues. The next step is to continue this involvement in the actual processes of development and implementation of the laws and regulations at all levels of government, and at all levels of application.

Laws and regulations are implemented at local levels, even those created at the federal and state levels. At the local level you usually have direct access to those both forming and implementing policy. Dealing with larger agencies (federal or state) there is greater opportunity for confusion and misinterpretation from the original intent at a higher level to implementation on the ground. Laws and regulations may be administered at the local level beyond original intent and authority provided. Informed producers can be effective in assisting the implementation of policy related to their operations to meet the needed environmental and economic protection while maintaining economic and cultural stability.

The Clean Water Act provides several options for the involvement of cattle operators and their associations. The CWA sets up a process for setting designated uses for state waters and the water quality criteria needed to meet those uses by each state every three years. Each state is also required to complete an assessment of its waterbodies every two years and list “impaired” waters not meeting water quality standards. Information from various state agencies is often used to compile this assessment. Providing information and reviewing agency findings at these two and three year cycles are points of involvement for the producer.

For those waters not meeting water quality standards, the CWA also sets up a process requiring states (or EPA if states fail to do so) to identify a process to meet water quality standards, called "Total Maximum Daily Load" (TMDL). This restoration process requires reduced discharges to the impaired waterbody through the tightening of requirements for both point and nonpoint sources.

SECTION D. GETTING HELP

(See Appendix 3. for additional contact information)

Technical Assistance

The traditional source of agricultural technical assistance has been the USDA Natural Resource Conservation Service and the State Land Grant Universities through the Extension Service. Both have local contacts through the NRCS District Conservation offices and Extension's local County Agents. NRCS has additional specialists at the state, regional and institute level. The Land Grant Universities draw on specialists and research faculty in the state. USDA provides additional support from the National Agricultural Library, where there is a special water quality program, the Agricultural Research Service (ARS) and Economic Research Service (ERS). Both North Carolina State University and Purdue University maintain databases specific to water quality programs, educational materials and research. Many agencies have specialists available for technical assistance along with their regulatory responsibilities.

Agricultural associations themselves are developing more information sources, with the Wheat Growers Association, National Pork Producers and American Sheep Industry Association having information specific to management practices. Of course there are your neighbors or respected producers willing to share their knowledge and experience. Private consultants are available to provide help to individual producers. Many of these consultants are certified to have a specific level of training - erosion control, range management, farm management, engineering, etc. Many allied industry firms also have technical support available to the producer.

Watershed Management Process

Information sources on watershed management are available from EPA, Know Your Watershed, many state water quality agencies, and numerous interest groups. Information about the formation and success of specific watershed projects maybe found in reports from EPA, USDA, in state reports or databases, and on the World Wide Web. Watershed Partnership Guides currently available from Know Your Watershed (Conservation Technology Information Center (CTIC), 120 Potter Drive, Room 170 West Lafayette, IN, 47906-1383) are:

- Getting to Know Your Watershed
- Putting together a Watershed Management Plan
- Building Local Partnerships
- Leading and Communicating
- Managing Conflict

Legislation/Regulations/Programs

NCBA and your State Associations are used to keeping track of laws and regulations that exist and of the agencies that implement them. They are also tracking current and proposed legislative actions. Contacts with legislative representatives are also useful.

Since most water quality programs are initiated at the state level, information regarding them can be obtained from the responsible agency. These state agencies usually are the Department of Environmental Quality, Natural Resources, or whichever agency EPA designates as responsible for water quality; Department of Agriculture; Department of Conservation; and/or Department of Fish and Game. Other departments might also administer water quality related programs. The Conservation Technology Information Center (CTIC) - Know Your Watershed program has available a directory which lists many of these key contacts for each state.

Legal Assistance

Several public legal foundations offer legal Assistance. Oregon Cattlemen's Association has formed a legal subsidiary to assist members. Your state association can be a resource for names of attorneys dealing with water quality matters. American Farm Bureau Federation sponsored a "Livestock Producer's Legal Guide" produced by Drake University Agricultural Law Center. The Iowa Cattlemen's Association co-sponsored a legal handbook for agriculture also developed by the Drake University Agricultural Law Center.

Financial Assistance

The traditional source for soil conservation cost share has been the Agricultural Conservation Program (ACP), which is now a part of USDA's Environmental Quality Improvement Program (EQIP). Water quality is one of EQIP's priority areas, and therefore is an important funding source for agriculture. However EQIP varies from the older ACP programs in that funds will be targeted to priority conservation areas and identified problems, rather than on a first come, first serve basis. USDA also has other special funding programs that might be accessed by cattle producers.

CWA Section 319 funds for nonpoint source pollution projects are allocated by EPA to the states. Many states have their own funding sources that are blended with the federal funds or allocated separately. Often these funding sources utilize the Conservation Districts to identify priorities, develop projects and administer funds for implementation locally. Watershed groups and watershed management are becoming priorities for these funds rather than to individual operations.

The Safe Drinking Water Act provides for water supply agencies to work with upstream landowners on source water protection. These agencies may pay for implementation of management practices, which will reduce their costs of water treatments. The City of New York working with watershed landowners is an example.

Seeking out funding sources and the means by which they are distributed are a key action of watershed management groups and even individual operators.

Our Own Resources

(A partial list of what is available from NCBA and state association efforts)

National Cattlemen's Beef Association

Integrated Resource Management (IRM) Natural Resource Desk Record, 1996
94 page binder (\$14.99)

Cattle and Beef Handbook, Facts, Figures and Information, 1997

State Cattle Associations

Arizona Cattle Feeder's Association

ACFA Feedlot Manual - Arizona's Water Quality Regulations, 1997 (\$25.00)

Contact: Basilio Aja

California Cattlemen's Association

California Rangeland Water Quality Management Plan, 1995

Contact: George Gough

Colorado Livestock Association

CCFA Environmental Handbook, 1996-97 and updated (\$300 to non-members)

EnviroStock, Inc. - A "for-profit" wholly-owned subsidiary environmental consulting company.

Georgia Cattlemen's Association

Agricultural Best Management Practices for Protecting Water Quality in Georgia, 1994

Contact: GA Environmental Protection Division (706) 542-3065

Kansas Livestock Association

Kansas Guidelines for Livestock Operations

Contact: Brad Harrelson

Nebraska Cattlemen

Cattlemen's Environmental Educational Program Fact Sheets (6)

Contact: Greg Ruehle

Texas Cattle Feeder's Association

Cattle Feeder's Environmental Handbook

Contact: Ross Wilson

Useful Web Sites

Agricultural Organizations

<http://www.beef.org>
<http://www.hill.beef.org>
<http://nppc.org>
<http://sheepusa.org>
<http://www.fb.com>
<http://nacd.org>
<http://www.ctic.purdue.edu/KYW/KYW.html>

National Cattlemen's Beef Association

National Pork Producers Council
American Sheep Producers Association
American Farm Bureau Federation
National Association of Conservation Districts
Know Your Watershed

Environmental Protection Agency

<http://www.epa.gov/ow>
<http://www.epa.gov/owow>
<http://www.epa.gov/surf>

Office of Water
Office of Wetlands, Oceans, and Watersheds
Surf Your Watershed

US Department of Agriculture

<http://www.nal.usda.gov/wqic>

<http://www.nrcs.usda.gov>
<http://www.reeusda.gov>

<http://www.wisc.edu/farmasyst>
[http://hermes.ecn.purdue.edu/
server/water/water.html](http://hermes.ecn.purdue.edu/server/water/water.html)

[http://www.bae.ncsu.edu/
bae/programs/extension/wqg](http://www.bae.ncsu.edu/bae/programs/extension/wqg)

National Agricultural Library,
Water Quality Information Center
Natural Resource Conservation Service
Cooperative State Research, Education
and Extension Service
Farm -A- Syst Program
National Extension Water Quality Database

North Carolina State Univ. Water Quality Group

Professional Societies

<http://www.srm.org>
<http://www.asas.uiuc.edu>
[http://www.forages.css.orst.edu/
organizations/forage/AFGC](http://www.forages.css.orst.edu/organizations/forage/AFGC)
<http://www.agronomy.org>

Society for Range Management
American Society of Animal Science

<http://www.swcs.org>
<http://www.asae.org>
<http://cast-science.org>
<http://awwa.org>
<http://www.nwpa.org>
<http://www.awra.org>
<http://wef.org>

American Forage and Grassland Council
American Society of Agronomy/Crop Science Society/
Soil Science Society
Soil and Water Conservation Society
Society of Agricultural Engineers
Council for Agricultural Science and Technology
American Water Works Association
National Water Resources Association
American Water Resources Association
Water Environment Foundation

SECTION E. APPENDIX 1- GLOSSARY

Best Management Practices (BMP) - A BMP is a practice or combination of practices that is determined by a state to be the most effective means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals [from: Federal Clean Water Act, 1977].

Coordinated Resource Management (CRM) - CRM is a resource planning, problem solving, and management process that allows for direct participation of everyone concerned with natural resource management in a given planning area.

Clean Water Act (CWA) - The Clean Water Act (Federal Water Pollution Control Act) was adopted by Congress in 1972. Early efforts focused on point sources, but the reauthorization amendments in 1987 placed more emphasis on controlling nonpoint sources.

Coastal Zone Act Reauthorization Amendments - The Coastal Zone Management Act was originally enacted in 1978, with the Reauthorization Amendments of 1990 placing additional requirements on the coastal states to address nonpoint source pollution in several categories including confined animal operations and grazing lands.

Designated Beneficial Uses - A designated use is one that is specified by a state in the water quality standards for a waterbody or segment.

Ground Water - Water that is trapped underground in an area of porous material. This water recharges slowly and is difficult to clean if it becomes contaminated.

Waterbodies - Waterbodies are the types of waters of the United States that are described in miles, square miles or acres.

Nonpoint Source (NPS) - This occurs from widely dispersed land areas and is carried in runoff water from a field, forest, or urban area to a stream, lake or ground water. While difficult to pinpoint physically, they are often classified by type: urban runoff, agriculture, mining, septic tank leach fields and forestry.

Point Source - A discernible, confined, and discrete conveyance such as a pipe, ditch or channel, tunnel, conduit, well container, concentrated animal feeding operation or vessel, from which pollutants are or may be discharged. Has not included agricultural stormwater discharges and return flows from irrigated agriculture.

Pollutant - Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewer sludge, ammunitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Pollution - An alteration of the quality of state waters by a pollutant, to a degree which unreasonably affects their beneficial uses or facilities which serve their beneficial uses.

Total Maximum Daily Load (TMDL) – While not defined by the Clean Water Act, a TMDL is basically the maximum amount of a pollutant that is allowed in a waterbody during any given 24-hour period from either point and/or nonpoint sources of pollution. TMDLs are associated with those waterbodies that have been identified as impaired via section 303(d) of the Clean Water Act.

Water Quality - Refers to the chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use.

Water Quality Assessment - Refers to the biennial National Water Quality Inventory required by Section 305(b) of the Clean Water Act. Each state provides their individual reports that are compiled by EPA and issued to Congress every two years. These assessments reports the impairments to designated beneficial uses of a waterbody in terms of the degree of support.

Water Quality Standards - Section 303 of the Clean Water Act requires states to establish water quality standards and Section 304 directs EPA to provide criteria to the states to help establish their standards. Standards identify the beneficial designated use (or uses) of a waterbody or segment and state water quality criteria necessary to protect the use(s). Standards may be numerical or narrative. Standards must be reviewed by the states every three years and approved by EPA. If not approved, EPA can step in with standards.

Watershed - A drainage area or basin in which all land and water areas drain or flow toward a central collector such as a stream, river, or lake at a lower elevation.

Wetlands - Areas that are covered with water during at least part of the year. They have certain distinctive types of soils, plants and drainage.

Example management practices:

Livestock Management - Those practices that assist with the control, time, frequency, or intensity of grazing to maintain vegetative cover sufficient to protect the soil and maintain or improve the quantity and quality of desired vegetation i.e., prescribed grazing, feeding and salting locations, etc.

Structural Improvements - Infrastructure improvements (water development, fencing, erosion control, etc.) and structures associated with normal livestock production operations (barns, sheds, corrals, shipping pens, etc.) may be used to facilitate grazing management. These practices should be planned, constructed, and utilized in a manner that enhances or maintains water quality.

Land Treatment - Land treatments (burning, mechanical manipulation, seeding, weed control, fertilization, etc.) may be used to manage vegetation, reduce erosion, improve range and pasture, or improve wildlife habitat.

Livestock Health - Practices used to reduce internal/external parasites and pathogens.

SECTION E. APPENDIX 2 - WATER LAWS

This section is intended to provide a brief non-legal overview of some laws relating to water quality that impacts beef cattle operations.

FEDERAL LAWS

1. Federal Water Pollution Control Act (Clean Water Act) of 1972

[PL 92-500]

This law was first enacted in 1972, with the most recent re-authorization in 1987. The law addresses both point and nonpoint source pollution and deals primarily with surface water.

Section 208. Directs the states to develop programs on nonpoint pollution which include: 1) an assessment of nonpoint source pollution and 2) a program to control nonpoint source pollution. In developing and implementing nonpoint source pollution programs, Best Management Practices (BMPs) are identified as a means for pollution control. This section is updated and expanded by Section 319.

Section 303. Requires states to establish water quality standards that identify designated beneficial use or uses of a water body and the water quality criteria necessary to protect the use(s) of that water body. These standards are to be revised every three years and the revision approved by EPA.

Section 303 (d). Requires states to develop a list of waters not meeting these standards.

Section 304. Directs EPA to provide criteria to the states to help establish their water quality standards.

Section 305 (b). Establishes a process for developing information on the quality of the Nation's water resources and reporting this information to EPA, the US Congress, and the citizens of this country. Each state, territory and Interstate Commission must do this every two years.

Section 319. Added in the 1987 reauthorization and reflects the increasing recognition of the importance of nonpoint source pollution. It also emphasizes the mandate that states implement effective management programs. These management programs are required to:

- Identify best management practices and measures;
- Identify non-regulatory and regulatory programs to achieve implementation of BMPs;
- Provide a schedule of annual milestones for the program;

- Identify federal programs and projects for consistency reviews.

This Section authorizes grants to States for developing and promoting statewide management plans and to implement nonpoint source management projects. It also provides for the designation of a state agency as the nonpoint source management agency.

Section 402. Pollution from **point sources** is subject to both (1) technology-based controls consisting of uniform standards established by EPA for treatment facilities of certain industries and municipalities; and (2) water quality based controls that meet state water quality standards for receiving waters. Individual effluent limits are enforced through the National Pollution Discharge Elimination System (NPDES) permits. Individual discharge requirements for these permits are based on the effluent quality needed to ensure compliance with water quality standards and require polluters to implement waste treatment and reduction programs.

Section 404. Includes wetlands of any size and location as “waters of the US,” and authorizes EPA and US Corps of Engineers to regulate activities that affect wetlands. Subsequent delegation of wetlands delineation for hay, pasture and grazing land is given to the USDA.

2. Coastal Zone Management Act Reauthorization Amendments of 1990 (CZMARA) [PL 101-508]

The original Coastal Zone Management Act was enacted in 1972 and involved both the EPA and the National Oceanic and Atmospheric Administration (NOAA). It is the first federally mandated program requiring specific measures to deal with agricultural nonpoint sources. All coastal states and territories, including the Great Lakes States are required to develop a coastal zone management plan. Then each state with an approved plan must submit a Coastal Nonpoint Pollution Control Program to EPA and NOAA which will implement management measures for nonpoint source pollution to restore and protect coastal waters. A list of economically achievable measures for controlling agricultural NPS pollution is part of each State’s management plan. States can first try voluntary incentive mechanisms, but must be able to enforce management measures if voluntary approaches fail. To strengthen the link between coastal zone management and nonpoint source pollution, the agencies designated for NPS control in CWA Section 319 and the agency designated for coastal zone management in CZMARA Section 306, will have a dual and co-equal role and responsibility in developing and implementing the coastal nonpoint program.

3. Safe Drinking Water Act of 1996 [PL 104-82]

This law requires the EPA to set standards for drinking water quality and requirements for water treatment by public water systems. This addresses both surface and ground waters. It is then a companion to the Clean Water Act, which does not address ground water specifically. This law authorizes the Wellhead Protection Program based on the concept that land-use controls and other preventive measures can protect ground water from contamination by chemicals and other hazards, including pesticides, nutrients and other agricultural chemicals. This law also provides for source water protection partnership programs to encourage locally driven, voluntary incentive based efforts by public water systems, local governments and private parties.

4. The Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Bill)

This law made significant changes in how USDA provides support to landowners for adopting conservation practices. The functions of the Agricultural Conservation Program (ACP), Great Plains Conservation Program (GPCP), Water Quality Incentives Projects, and Colorado River Salinity Control Program were combined into a single program, the Environmental Quality Incentives Program (EQIP). This also changed the way cost sharing funds are allocated. Previously, these funds were administered through state and county Agricultural Conservation and Stabilization Committees to ranchers and farmers on a first - come; first - served basis. Now, under EQIP, the funds will be targeted to priority conservation areas and identified problems outside the priority areas. Half of the appropriated funding for the program is targeted at practices or systems relating to livestock production. However, owners of large confined livestock operations (generally over 1,000 animal units, but states may request another definition based on environmental circumstances) are not eligible for cost share assistance for installing animal waste storage or treatment facilities.

5. Endangered Species Act of 1973 [PL 93-205]

The Endangered Species Act, particularly as it relates to aquatic (fish) habitat, is having a great influence on water quality standards, restricting land use in recovery plans, and imposing new jurisdictions.

STATE WATER LAWS

1. Water Rights

Water quantity laws recognize and protect the ownership of private property and the use of water for beneficial purposes. Private ownership may be individual, corporate, district, municipal or other. Both surface and ground waters in individual ownership are a property right. In the United States these rights are either *Riparian*, *Appropriative*, or *Correlative* rights.

The Riparian Doctrine- Riparian rights generally were adopted from the Common Law of England because of similar climate and geography utilized in the eastern states. Where given full recognition in the West, accords to the owner of land contiguous to a watercourse a right to the use of water on such land for various beneficial purposes.

The Appropriation Doctrine - This doctrine contemplates the acquisition of rights to the use of water by diverting water and applying it to reasonable beneficial use for a beneficial purpose, in accordance with procedures and under limitations specified by constitutional and statutory law or acknowledged by the courts.

The Correlative Doctrine - Every landowner shall be entitled to a reasonable and beneficial use of the ground water underlying his or her land subject to the correlative rights of other landowners when the ground water supply is insufficient for all users.

2. State Water Quality Laws

Most, if not all, state laws relating to water quality have been updated to accommodate federal laws and provide for the delegation of water quality authority to a state agency or agencies. Several states have actually delegated authority, all or partial, for nonpoint source protection for agricultural operations to the State's Department of Agriculture and/or Conservation. In others it remains with the designated water quality agency. States vary in the manner of handling confined animal facilities. Some take the view that if there is no discharge, there is no need for an NPDES permit. Others implement the NPDES permit system as laid out in the Clean Water Act, while still others have their own permitting system to handle operations smaller than defined in the Act.

3. State Water Quality Programs

State water quality programs, other than the permit process, should be the focus of producer involvement. In the coastal states there may still be confusion over implementing nonpoint programs as mandated by both the Clean Water Act and the Coastal Zone Management Act Reauthorization Amendments. Attention should be paid to which agency or agencies are involved, how the programs are implemented, where there are opportunities for input by the cattle operation, and where funding sources might occur. This is where all laws, regulations and agency staff actions come together and regulate your management strategies and decisions.

TRENDS

During the past decade that NCA/NCBA has been dealing with this priority issue, attention to water quality has evolved beyond the “traditional” concerns to include those of species habitat, drinking water and others. What once was an area focused on primarily by regulatory agencies has now taken on a much larger social context with water quality and watershed management becoming an area of interest to urban, rural, and environmental segments throughout the nation. This increasing attention to water quality issues is reflected by the implementation of new programs or laws on both the state and national levels. Fortunately, most individuals realize that nonpoint source pollution is a widespread phenomenon that cannot be addressed through the traditional command and control methods employed towards point source control. Collaborative approaches to water quality maintenance and enhancement appear to be gaining more favor amongst regulatory agencies. More recently, litigation has forced tighter implementation of laws and regulations. Courts have dictated the processes for setting water quality standards and the process for reaching these standards through both consent decrees and settlement agreements with EPA.

While collaborative approaches are being advocated, and in many cases is the method applied, the beef cattle industry must not be lulled into complacency regarding water quality. There is still very much an attitude by many that regulation is the answer. Feedlots are facing such threats currently. What once may have been a potential impact upon your private property rights has evolved into that which is viewed as a public-trust doctrine i.e., the water flowing through your property is the public’s and therefore must not be impacted by your activities. The industry must document their efforts towards the protection of water quality or face the threat of collaborative approaches being swept aside in favor of regulatory actions.

SECTION E. APPENDIX 3 RESOURCE LISTS

a. STATE CATTLE ASSOCIATIONS

Alabama Cattlemen's Assn.
P.O. Box 2499
Montgomery AL 36102-2499
Phone: (334) 265-1867
FAX: (334) 834-5326

Arizona Cattle Feeders Assn.
1401 N 24th Street, Suite 4
Phoenix, AZ 85008-4618
Phone: (602) 273-7414
FAX: (602) 220-9833

Arizona Cattle Grower's Assn.
1401 N 24th Street, Suite 4
Phoenix, AZ 85008-4618
Phone: (602) 267-1129
FAX: (602) 220-9833

Arkansas Cattlemen's Assn.
310 Executive Court
Little Rock, AR 72205-4550
Phone: (501) 224-2114
FAX: (501) 224-5377

California Cattlemen's Assn.
1221 H Street
Sacramento, CA 95814-1910
Phone: (916) 444-0845
FAX: (916) 444-2194

Colorado Livestock Assn.
11990 Grant Street, Suite 402
Denver, CO 80233-1136
Phone: (303) 457-2232
FAX: (303) 457-4609

Colorado Cattlemen's Assn.
8833 Ralston Road
Arvada, CO 80002-2239
Phone: (303) 431-6422
FAX (303) 431-6446

Florida Cattlemen's Assn.
P.O. Box 421929
Kissimmee, FL 34742-1929
Phone: (407) 846-6221
FAX (407) 933-8209

Georgia Cattlemen's Assn.
P.O. Box 24510

Macon, GA 31212-4510
Phone: (912)474-6560
FAX: (912) 474-5732

Hawaii Cattle Producers Co-Op
P.O. Box 2448
Kealahou, HI 96750
Phone: (808) 323-2190
FAX: (808) 323-3571

Hawaii Cattlemen's Council
P.O. Box 1166
Ewa Beach, HI 96706-8166
Phone: (808) 672-5042
FAX: (808) 672-5042

Idaho Cattle Association
P.O. Box 15397
Boise, ID 83715-5397
Phone: (208) 343-1615
FAX: (208) 344-6695

Illinois Beef Association
2060 West Iles Ave., Suite B
Springfield, IL 62704-4191
Phone: (217) 787-4280
Fax: (217) 793-3605

Ind. Cattlemen's Assn. of Texas
704 E. Wonsley Dr., Suite 202
Austin, TX 78753-6502
Phone: (512) 836-1321
FAX: (512) 836-8937

Indiana Beef Cattle Assn.
8770 Guion Road, Suite A
Indianapolis, IN 46268-3017
Phone: (317) 872-2333
FAX: (317) 872-2364

Iowa Cattlemen's Assn.
P.O. Box 1490
Ames, IA 50014-1490
Phone: (515) 296-2266
FAX: (515) 296-2261

Kansas Livestock Assn.
6031 SW 37th Street
Topeka, KS 66614-5129
Phone: (785) 273-5115

FAX: (785) 273-3399

Kentucky Cattlemen's Assn.
176 Pasadena Drive
Lexington, KY 40504
Phone: (606) 278-2899
FAX: (606) 260-2060

Louisiana Cattlemen's Assn.
4921 Interstate 10 Frontage Rd.
Port Allen, LA 70767
Phone: (504) 343-3491
FAX: (504) 336-0002

Maryland Cattlemen's Assn.
Univ. of MD, 1129 Ani Sci Center
College Park, MD 20742-0001
Phone: (301) 405-1394
FAX: (301) 314-0-51

Michigan Cattlemen's Assn.
P.O. Box 24041
Lansing, MI 48909-4041
Phone: (517) 336-6780
FAX: (517) 336-6799

Minnesota Cattlemen's Assn.
RR 2 Box 203
Comfrey, MN 56019-9305
Phone: (507) 877-5003
FAX: (507) 877-5003

Mississippi Cattlemen's Assn.
680 Monroe Street, Suite A
Jackson, MS 39202-3422
Phone: (601) 345-8951
FAX: (601) 355-7128

Missouri Cattlemen's Assn.
2100 East Broadway, Suite 200
Columbia, MO 65201-6082
Phone: (573) 499-9162
FAX: (573) 499-9167

Montana Stockgrowers Assn.
420 N. California
Helena, MT 59601
Phone: (406) 442-3420
FAX: (406) 449-5105

Nebraska Cattlemen
1335 H Street
Lincoln, NE 68508-3748
Phone: (402) 475-2333
FAX: (402) 4750822

Nevada Cattlemen's Assn.
P.O. Box 310
Elko, NV 89803-0310
Phone: (702) 738-9214
FAX: (702) 738-5208

New Mexico Cattle Growers Assn.
P.O. Box 7517
Albuquerque, NM 87194-7517
Phone: (505) 247-0584
FAX: (505) 842-1766

New York Beef Producers Assn.
P.O. Box 147
Morrisville, NY 13408-0147
Phone: (315) 684-7114
FAX: (315) 684-7114

North Carolina Cattlemen's Assn.
2228 North Main Street
Fuquay Varina, NC 27526-8572
Phone: (919) 552-9111
FAX: (919) 552-9216

North Dakota Stockmen's Assn.
407 South 2nd Street
Bismarck, ND 58504-5535
Phone: (701) 223-2522
FAX: (701) 223-2587

Ohio Cattlemen's Assn.
10600 US Highway 42
Marysville, OH 43040-9526
Phone: (614) 873-6736
FAX: (614) 873-6835

Oklahoma Cattlemen's Assn.
P.O. Box 82395

Oklahoma City, OK 73148-0395
Phone: (405) 235-4391
FAX: (405) 235-3608

Oregon Cattlemen's Assn.
3415 Commercial St. SE, Suite G
Salem, OR 97302-5169
Phone: (503) 361-8941
FAX: (503) 361-8947

Pennsylvania Cattlemen's Assn.
2017 Halfmoon Valley Road
Port Matilda, PA 16870
Phone: (814) 692-4208
FAX: (814) 692-4208

South Carolina Cattlemen's Assn.
210 Jackson St.
Barnwell, SC 29812
Phone: (803) 259-3259

South Dakota Cattlemen's Assn.
P.O. Box 314
Kennebec, SD 57544-0314
Phone: (605) 869-2272
FAX: (605) 869-2279

South Dakota Stockgrowers Assn.
426 Saint Joseph Street
Rapid City, SD 57701-2784
Phone: (605) 342-0429
FAX: (605) 342-0463

Tennessee Cattlemen's Assn.
610 West college St., Suite 204
Murfreesboro, TN 37130-3523
Phone: (615) 896-2333
FAX: (615) 896-0244

Texas & Southwest Cattle Raisers
1301 West 7th Street
Fort Worth, TX 76102-2604
Phone: (817) 322-7064
FAX: (817) 332-8523

Texas Cattle Feeders Assn.
5501 West Interstate 40
Amarillo, TX 79106-4617
Phone: (806) 358-3681
FAX: (806) 352-6026

Utah Cattlemen's Assn.
150 South 600 E, Suite 108
Salt Lake City, UT 84102-1961
Phone: (801) 355-5748
FAX: (801) 532-1669

Virginia Cattlemen's Assn.
P.O. Box 9
Daleville, VA 24083-0176
Phone: (540) 992-1009
FAX: (540) 992-4632

Washington Cattle Feeders Assn.
P.O. Box 2382
Pasco, WA 99302-2382
Phone: (509) 547-5538
FAX: (509) 547-5563

Washington Cattlemen's Assn.
P.O. Box 96
Ellensburg, WA 98926-0096
Phone: (509) 925-9871
FAX: (509) 925-3004

West Virginia Cattlemen's Assn.
P.O. Box 668
Buckhannon, WV 26201-0668
Phone: (304) 472-4020
FAX: (304) 472-4021

Wisconsin Cattlemen's Assn.
PO Box 868
New Glarus, WI 53574
Phone: (608) 527-5747
FAX: (608) 527-5747

Wyoming Stock Growers Assn.
P.O. Box 206
Cheyenne, WY 82003-0206
Phone: (307) 638-3942
FAX: (307) 635-2524

b. ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. HEADQUARTERS

Office of the Administrator

Carol M. Browner
401 M Street, SW
Washington, DC 20460
(202) 260-4700 ph

Office of Assistant Administrator for Enforcement & Compliance Assurance

Steven A. Herman
3204 Ariel Rios Federal Building
1200 Pennsylvania Avenue NW
Washington, DC 20044
(202) 564-2440 ph
(202) 501-3842

Office of Regulatory Enforcement

Director, Eric V. Schaeffer
3142E Ariel Rios Federal Building
1200 Pennsylvania Avenue, NW
Washington, DC 20044
(202) 564-2220 ph
(202) 564-0011 fax

Water Enforcement Division

NPDES Program
401 M Street, S.W.
Washington, D. C. 20460
(202) 564-2245 ph
(202) 564-0018 fax

Office of the Assistant Administrator for Water

J. Charles Fox
E1029C Waterside Mall
401 M Street, SW
Washington, DC 20460
(202) 260-5700

Office of Ground Water and Drinking Water

Director, Cynthia C. Dougherty
E1209 Waterside Mall
401 M Street, SW
Washington, DC 20460
(202) 260-5543

Office of Wastewater Management

Director, Michael B. Cook
NE2607 Waterside Mall
401 M Street, SW
Washington, DC 20460
(202) 260-5850

Office of Science and Technology

Director, Tudor T. Davies
E811D Waterside Mall
401 M Street, SW
Washington, DC 20460
(202) 260-5400

Office of Wetlands, Oceans, and Watersheds

Director, Robert H. Wayland III

707B Fairchild Building
499 S. Capitol Street, SW
Washington, DC 20024
(202) 260-7166

Assessment and Watershed Protection Division

Director, Geoffrey H. Grubbs
200G Fairchild Building
499 S. Capitol Street, SW
Washington, DC 20024
(202) 260-7040 ph
(202) 260-7024 fax

Oceans and Coastal Protection Division

Director, Suzanne E. Schwartz
811A Fairchild Building
499 S. Capitol Street, SW
Washington, DC 20024
(202) 260-1952 ph
(202) 260-8742 fax

Wetlands Division

Director (vacant)
708B Fairchild Building
499 S. Capitol Street, SW
Washington, DC 20024
(202) 260-1917 ph
(202) 260-2356 fax

REGIONAL OFFICES

- Region 1 - Connecticut, Maine, New Hampshire, Rhode Island, Vermont
JFK Federal Building
Boston, MA 02203-0001
(617) 565-3400
- Region 2 - New Jersey, New York, and territories of Puerto Rico and Virgin Islands
290 Broadway
New York, NY 10007
(212) 637-3000
- Region 3 - Delaware Maryland, Pennsylvania, Virginia, West Virginia, Dist. Of Columbia
841 Chestnut Bldg.
Philadelphia, PA 19107
(215) 566-5000
- Region 4 - Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104
(404) 562-9900

- Region 5 - Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
77 West Jackson Blvd.
Chicago, IL 60604
(312) 353-2000
- Region 6 - Arkansas, Louisiana, New Mexico, Oklahoma, Texas
1445 Ross Ave., Suite 1200
Dallas, TX 75202
(214) 665-2200
- Region 7 - Iowa, Kansas, Missouri, Nebraska
726 Minnesota Ave.
Kansas City, KS 66101
(913) 551-7003
- Region 8 - Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
999-18th St., Suite 500
Denver, Colorado 80202-2466
(303) 312-6312
- Region 9 - Arizona, California, Hawaii, Nevada and territories of Guam and Am. Samoa
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-1500
- Region 10 - Alaska, Idaho, Oregon, Washington
1200 6th Avenue
Seattle, WA 98101
(206) 553-1200

c. US DEPARTMENT OF AGRICULTURE WATER QUALITY PROGRAMS

Water Quality Working Group

Fred Swader, Coordinator
USDA CSREES, Natural Resources and Environment
(202) 205-5853

National Agricultural Library - Water Quality Information Center

National Agricultural Library Room 1402
10301 Baltimore Boulevard
Beltsville, MD 20705-2351
Contact: Jack R. Makuch
Jmakuch@nal.usda.gov

National Extension Water Quality Database

Contact: Cathy Burwell
Purdue University
(219) 854-2309 FAX: (219) 854-2309
e-mail: Cathy_Burwell@acn.purdue.edu

Farm-a-Syst Program

Gary Jackson
216-C Ag Hall, 1415 Linden Drive
Univ. of Wisconsin, Madison, WI 53706
(608) 262-0200; FAX (608) 265-2775
National Water Quality Evaluation Project
NCSU Water Quality Group

North Carolina State University
615 Oberlin Rd. , Suite 100
Raleigh, NC 27605-1126
(919) 515-3723 FAX (919) 515-7448

NATURAL RESOURCES CONSERVATION SERVICE

Pearlie S. Reed, Chief
USDA – NRCS
P.O. Box 2890
Washington, D.C. 20013
(202) 720-3291

Dennis Thompson, Range and Grazing Land Ecologist
USDA/NRCS Ecological Sciences Division
P.O. Box 2890, Room 6154 South
Washington, DC 20013
(202) 720-2587; FAX: (202) 720-2646

Grazing Lands Conservation Institute, Larry D. Butler, Director
501 W. Felix St., FWFC, Bldg. 23
Fort Worth, Texas 76115
(817)-509-3220; FAX: 817-509-3210

Watershed Management Institute, Carolyn Adams, Director,
Department of Geological sciences, Box 351310
University of Washington
Seattle, WA 98195-1310
(206) 616-5724; FAX: (206) 616-8417

COOPERATIVE STATE RESEARCH, EDUCATION AND EXTENSION SERVICE

Natural Resources and Environment

Ralph Otto, Deputy Administrator; (202) 401-5877; Fax: (202) 401-1706
Maurce Horton, Water Quality, (202) 401-4504
Mary Ann Rozum, Water Quality, (202) 401-4533
Karrie Shaffer, Water Quality, (202) 401-4515

Plant and Animal Systems

Edward M. Wilson, Deputy Administrator, (202) 401-4329; FAX (202) 401-4888
Henry Tyrrell, Animal Production Systems, (202) 401-5611
J. Preston Jones, Forage, Grassland, Range, (202) 401-1990

AGRICULTURAL RESEARCH SERVICE

National Program Staff
USDA-ARS-NPS
Building 005, BARC-W
Beltsville, MD 20705

Animal Production	(301) 504-7050
Forage and Pasture	(301) 504-5618
Range & Systems	(301) 504-5281
Water Quality & Water Mgt.	(301) 504-7034

ECONOMIC RESEARCH SERVICE

Resource Economics Division
RM S4186
1800 M Street

Washington, D.C. 20036-5831
Phone: (202) 694-5500
Fax:: (202) 694-5773

d. OTHER FEDERAL

US Geological Survey

The US Geological Survey is responsible for collecting, storing and analyzing water information throughout the nation, including water quality data. The following is a list of major programs and associated offices:

Coordination of Water Information Program

(Office of Water Data Coordination)

National Water-Quality Assessment Program (NAWQA)

(Office of Dept. Asst. Chief Hydrologist for NAWQA)

National Water Information Clearinghouse

(National Water Quality Information Clearinghouse office, Branch of Water Information Transfer)

National Water-Quality Networks Program

(Office of Water Quality)

National Water Summary Program

(Branch of National Water Summary)

Coastal Zone Information Center (NOAA)

NOAA National Ocean Service

Office of Ocean and Coastal Resource Management

1825 Connecticut Ave., N.W.

Washington, D.C. 20235

(202) 606-4111

e. LEGAL

Defenders of Property Rights

6235 33rd Street, NW

Washington, DC 20015

(202) 638-0240

The Heritage Fund

214 Massachusetts Avenue, NE

Washington, DC 20002

(202) 608-6520

Pacific Legal Foundation

2151 River Plaza Drive, Suite 305

Sacramento, CA 95833

(916) 641-8888

Mountain States Legal Foundation

707 Seventeenth Street, Suite 3030

Denver, CO 80202-3408

(303) 292-1980

Washington Legal Fund

2009 Massachusetts Avenue, NW

Washington, DC 20036

(202) 588-0386

f. CERTIFIED PROFESSIONALS/PROFESSIONAL SOCIETIES

American Registry of Professional Animal Scientists

[American Society of Animal Science]

111 North Dunlap Avenue

Savoy, IL 61874

Phone: (217) 356-3182; FAX (217) 398-4119

Certified Range Consultants

[Society for Range Management]

1839 York Street

Denver, CO 80206-1213

Phone: (303) 355-7070; FAX (303) 355-5059

Certified Professional in Erosion and Sediment Control

[Soil and Water Conservation Society]

7515 NE Ankeny Road

Ankeny, IA 50021

Phone: (515) 289-2331; FAX: (515) 289-1227

Certified Crop Advisor

[American Society of Agronomists]

677 South Segoe Road

Madison, WI 53711-1086

Phone: (608) 273-8080

American Society of Agricultural Engineers

2950 Niles Road

St. Joseph, MI 49085-9659

Phone: (616) 429-0300; FAX (616) 429-3852

American Water Works Association

6666 West Quincy Avenue

Denver, CO 80235

Phone: (303) 794-7711