

Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category

Appendix G: State BMP Programs

Full document available at
<http://www.epa.gov/waterscience/guide/aquaculture>

State BMP Programs

A number of states, including Alabama, Arizona, Arkansas, Florida, Hawaii, and Idaho, were found to have recommended BMPs for AAP. In addition, BMPs have also been developed for specific types of aquatic species. BMPs are addressed in manuals or regulations, depending on the state. Data were collected from in-house resources and through Internet research. An example of technical guidance on BMP development is *Best Management Practices for Flow-through, Net Pen, Recirculating, and Pond Aquaculture Systems* (Tucker et al., 2003). This guidance document provides examples of existing BMP plans and state regulations, as well as technical information that can be used in facilities' BMP plan development. Information is provided for four production system types and ranges from guidance on site selection, to solids and feed management, to facility operation and maintenance.

Alabama

Dr. Claude Boyd and his colleagues, with funding from the Alabama Catfish Producers (a division of the Alabama Farmers Federation), have developed a set of BMPs for aquaculture facilities in Alabama. The BMPs are described in a series of guide sheets that have been adopted by USDA's Natural Resources Conservation Service (NRCS) to supplement the Service's technical standards and guidelines (Auburn University and USDA, 2002). The NRCS technical standards are intended to be referenced in Alabama Department of Environmental Management rules or requirements that are promulgated for aquaculture in Alabama. The guide sheets address a variety of topics, including

reducing storm runoff into ponds, managing ponds to reduce effluent volume, erosion control in watersheds and on pond embankments, settling basins and wetlands, and feed management.

Arizona

Arizona Aquaculture BMPs addresses treatment and discharge of aquaculture effluents containing nitrogenous wastes and closing of aquaculture facilities when they cease operation (Fitzsimmons, 1999).

Use of these BMPs is intended to minimize the discharge of nitrates from facilities without being too restrictive for farm operations. The draft document *Arizona Aquaculture BMPs* describes BMPs that can minimize nitrogen impacts from aquaculture facilities. A list of information resources is also provided for additional information about Arizona aquaculture and BMPs (Fitzsimmons, 1999). The BMPs are available at:

<http://ag.arizona.edu/azaqua/bmps.html>.

Arkansas

The Arkansas Bait and Ornamentals Fish Growers Association (ABOFGA, n.d.) developed a list of BMPs to help its members make their farms more environmentally friendly. More specifically, the Association provides a set of BMPs that help to conserve water, reduce effluent, capture solids, and manage nutrients. Members may voluntarily agree to adopt the BMPs on their farms (ABOFGA, n.d.).

Florida

Florida's aquaculture certificate of registration and BMP program requires any person engaging in aquaculture to be annually certified by the Florida Department of Agriculture and Consumer Services and to follow BMPs established by the Department (Chapter 597, Florida Aquaculture Policy Act, Florida Statutes). *Aquaculture Best Management Practices*, a manual prepared by the department, establishes BMPs for aquaculture facilities in Florida. By legislative mandate, the BMPs in the manual are intended to preserve environmental integrity, while eliminating cumbersome, duplicative, and confusing environmental permitting and licensing requirements. When these BMPs are followed, aquaculturists meet the minimum standards necessary for protecting and maintaining offsite water quality and wildlife habitat (FDACS, 2000). Additional information is available from Florida's Division of Aquaculture website at <http://www.FloridaAquaculture.com>.

Georgia

Agriculture enterprises such as fish farms are required to conduct activities consistent with Best Management Practices (BMP's) established by the Georgia Department of Agriculture. BMP's are management strategies for control and abatement of nonpoint source pollution resulting from agriculture. The manual *Agricultural Best Management Practices for Protecting Water Quality in Georgia* provides information on using and maintaining BMP's. The manual is available from the Georgia Soil and Water Conservation Commission (Georgia Department of Natural Resources, 2003).

Hawaii

Hawaii developed a practical BMP manual to assist aquaculture farmers in managing their facilities more efficiently and complying with discharge regulations. The manual, *Best Management Practices for Hawaiian Aquaculture* (Howerton, 2001), is available from the Center for Tropical and Subtropical Aquaculture. A copy of the manual is available at: http://www.ctsa.org/upload/publication/CTSA_148631672853284080260.pdf.

Idaho

In combination with site-specific information, *Idaho Waste Management Guidelines for Aquaculture Operations* can be used to develop a waste management plan to meet water quality goals. Such a waste management plan would address Idaho's water quality concerns associated with aquaculture in response to the Clean Water Act and Idaho's Water Quality Standards and Wastewater Treatment Requirements. The manual is also intended to assist aquaculture facility operators in developing BMPs to maintain discharge levels that do not violate the state's water quality standards (IDEQ, n.d.). The manual is available for download at: http://www.deq.state.id.us/water/prog_issues/agriculture/aquaculture.cfm.

Louisiana

The LSU AgCenter has published a guidance manual, *Aquaculture Production Best Management Practices (BMPs)*, which provides a list of BMPs that can help producers to conserve soil and protect water and air resources by reducing pollutants. The manual is available at <http://www.lsuagcenter.com/en/environment/conservation/bmps/aquaculture+production+best+management+practices.htm>.

Missouri

Missouri has published the following guidance document to answer typical questions that aquaculture facility owners or operators may have: *Missouri Aquaculture Environmental and Regulatory Guide: A Guide to Regulatory Compliance, Sources of Information and Assistance and Answers to Environmental Questions for Aquaculture Businesses in Missouri*. The guide provides basic information about regulatory requirements and suggestions for protecting operators and owners of aquaculture facilities, their workers and the environment through pollution prevention. Each guide sheet in the publication deals with a separate issue, such as pollution prevention, dead fish disposal, backflow prevention, drug use, and preventing fish diseases. A copy of the guide is available at:

<http://www.dnr.mo.gov/pubs/pub513.PDF>.

Ohio

The *Ohio Pond Management Handbook*, created by the Department of Natural Resources' Division of Wildlife, provides guidance to pond or small lake owners on pond management issues. Owners of new ponds, owners of old ponds, or landowners who plan to build a pond are given guidance on how to best manage fish stocks, aquatic vegetation, fish health, and surrounding pond wildlife (Ohio DNR, 1996). The guide is available for download at:

<http://www.dnr.state.oh.us/wildlife/PDF/pondmgt.pdf>.

West Virginia

West Virginia University, Extension Service has developed a guide, as part of their Aquaculture Information Series, for managing aquaculture waste entitled *Waste Management in Aquaculture*. The guide discusses BMPs, and their associated costs,

that may be used to reduce aquaculture waste. A copy of the guide is available at: <http://www.wvu.edu/~agexten/aquaculture/waste02.pdf>. Other aquaculture-related fact sheets and documents are available at: <http://www.wvu.edu/~agexten/aquaculture/factsht.htm>.

Wisconsin

As of July 2005, the University of Wisconsin is finishing completing a draft version of a BMP user manual for aquaculture for Wisconsin and the Great Lakes Region. The draft document will be reviewed by various agencies before it is made available to the public.

Other BMP Guidance Documents

BMPs have also been developed for specific species, including shrimp, hybrid striped bass, and trout. The Global Aquaculture Alliance, in *Codes of Practice for Responsible Shrimp Farming*, has compiled nine recommended codes of practice that are intended to serve as guidelines for parties who want to develop more specific national or regional codes of practice or formulate systems of BMPs for use on shrimp farms. These codes of practice address a variety of topics, including mangroves, site evaluation, design and construction, feeds and feed use, shrimp health management, therapeutic agents and other chemicals, general pond operations, effluents and solid wastes, and community and employee relations (Boyd, 1999). The purpose of the document is to provide a framework for environmentally and socially responsible shrimp farming that is voluntary, proactive, and standardized. The document also provides a background narrative that reviews the general processes involved in shrimp farming and the environmental and social issues facing the industry (Boyd, 1999).

The Hybrid Striped Bass Industry: From Fish Farm to Consumer is a brochure that provides guidance to new and seasoned farmers in the proper handling of fish from the farm to the consumer. Although the brochure is primarily geared toward providing quality fish products to consumers, the information it provides about the use of drugs and chemicals, including pesticides and animal drugs and vaccines, could be used to benefit the environment (Jahncke et al., 1996).

The Trout Producer Quality Assurance Program of the U.S. Trout Farmer's Association (USTFA) is a two-part program that emphasizes production practices that enable facilities to decrease production costs, improve management practices, and avoid any possibilities of harmful drug or other chemical residues in fish. Part 1 discusses the principles of quality assurance, and Part 2 provides information about the highest level of quality assurance endorsed by the USTFA. Although the program addresses a variety of subjects related to trout production, the discussion on waste management and drugs and chemicals can be applied to protecting the environment (USTFA, 1994).

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St. Louis, Missouri, 63151-0799, 314-416-9500, Fax: 314-416-9500, E-mail: homeoffice@gaalliance.org, Web page: <http://www.GAAlliance.org>.

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