

Lincoln University Cooperative Research

Aquaculture

Policies and Permits

Introduction

Aquaculture, the cultivation and harvesting of aquatic plants and animals, has seen a dramatic increase in recent years. Aquaculture is technically defined as the husbandry of aquatic organisms in a controlled or selected environment. Aquatic organisms are defined as fish, amphibians, reptiles, or aquatic plants. The term “fish” is a broad definition for any aquatic, gilled animal commonly known as “fish,” as well as mollusks, crustaceans, or other invertebrates. They must be produced under controlled conditions that is feeding, tending, harvesting, and such other activities as are necessary to properly raise and market the products in ponds, lakes, streams, or similar holding areas (Code of Federal Regulations, 1997). Recently, aquaculture has found its own niche in the Missouri economy and its farming and consumer communities. It has become a means for farmers to diversify their income and help maintain their farms when their other areas of farming become unprofitable. It provides increased markets for farm-raised fish locally and out of state, while also providing more jobs. The 1998 Census of Aquaculture, recently released by the U.S. Department of Agriculture’s National Agricultural Statistics Service (NASS), stated that Missouri is the leading state in aquaculture food fish sales in the 12 state north central region (1998). The census also indicated that the 49 aquaculture farms in Missouri sold nearly \$5.4 million of fish in 1998.

As farmers and other potential producers become aware of the many beneficial aspects of aquaculture, they become more interested in getting involved in the industry. However, farmers and other potential individuals who seek to begin their own aquaculture businesses are immediately bombarded with confusing, unorganized regulations, policies, and permits. The number of agencies and sub-agencies alone give reason for confusion. Federal regulatory agencies include the Departments of Army Corp of Engineers (ACE), Environmental Protection Agency (EPA), Fish and Wildlife (USFW), and the Food and Drug Administration (FDA). The

state agencies include Departments of Revenue (DOR), Natural Resources (DNR), Conservation (MDC), and Transportation (DOT). There are also county and local regulations that may affect farmers. All of these areas need to be addressed and controlled, however, compliance with all the regulations attached to these concerns can be costly, time consuming, and distracting to the typical aquaculture farmer. Due to the sudden increase in this industry and the pressure to assign regulations and permits, some of these laws do not take full consideration of aquaculture, but are grouped with typical agriculture. Some laws enacted prior to the establishment of the aquaculture industry in Missouri actually compete with aquaculture farmers. Understandably, they discourage involvement in this industry. These permits and regulations must be simplified and organized to reduce frustration felt by aquaculture farmers and those wanting to start their own aquaculture farm. This publication provides a brief summary of the policies, regulations, and permits governing aquaculture in Missouri. The Missouri Aquaculture Environmental and Regulatory Guide, a publication put out by the DNR Technical Assistance Program (TAP), greatly assisted in providing information on the following permits. Flow charts are also included at the close of this document correlating to the sections of the text. This is to better assist in understanding the permit requirements and obligations of each individual aquaculture operation.

To Begin Fish Farming

During the design and planning phase of an aquaculture operation, it would be a good idea to make an appointment with the appropriate DNR regional personnel to discuss probable permit requirements. Because each site is different, permit rules change. When deciding what species will be raised, the producer must first check the Approved Aquatic Species List for Missouri. The Missouri Department of Conservation distributes this list and it is illegal to raise any fish not on that list. The Approved Aquatic Species List can be found in the Wildlife

Codebook (2000) put out by MDC. The producer must also be sure not to take fish or use the “waters of the state” for their operation. “Waters of the State” are defined as “all rivers, streams, lakes and other bodies of surface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned or leased by a single person or by two or more persons jointly or as tenants in common or by corporate shareholders, and including waters of the United States lying within the state”. Waters of the state will include any waters which have been stocked by the state or which are subject to movement of fishes to and from waters of the state” (Wildlife Code of Missouri, 2000). If planning to build ponds, lakes, or other constructions for commercial purposes consisting of five acres or more of land, a Land Disturbance Permit is required by DNR (see water use flow chart). The Natural Resource Conservation Service (NRCS) provides guidelines for commercial pond construction including planning considerations, design criteria, biology specification, etc. (see water use flow chart).

Water

The most important aspect when considering fish farming is the water source. Water can come from a variety of sources such as springs, creeks, wells, or watersheds into ponds and lakes. A Water Well Certification is needed for the construction of any water well, monitoring well, mineral exploratory well, or ground water heat pump system. For a Water Well Certification, the fee is \$35 and is collected by the contractor. A Well Certification Report certifying proper construction must be sent to the Missouri Division of Geology and Land Survey (GLS) by the contractor within 60 days. This permit is good for the life of the well. If the operation will possibly discharge contaminated water due to rainwater and the operation fits into certain categories and size groups, a Storm Water General Permit is required by DNR. The

fee is \$150 and is good for five years. If the farm stores toxic materials or large amounts of potential contaminants exposed to rainfall, or is unusual in design, a Storm Water Site Specific Permit is required. The fees can range from \$1,500 – \$3,000 annually depending on the operation. The Storm Water Permits are part of the National Pollutant Discharge Elimination System (NPDES) regulated by DNR. If the operation has the capacity to withdraw 100,000 gallons per day from surface water, a Major Water User Permit is required by DNR. There are no fees and the permit is good for the life of the water source.

If planning to dredge or fill materials into any waters of the state, the ACE, due to the Clean Water Act, requires a 404 permit. A 401 Water Quality Certification is also required as part of the Clean Water Act. The length of the permit varies and will take approximately 60 days to process. There are no fees associated with 401 permits. If any dams exceed 35 feet, the standards set by DNR in the Dam Safety Act must be followed. There are no fees associated.

(See water use flow chart)

Solid Waste/Effluent Discharge

To minimize or prevent water pollution, discharge permits are required when discharging water that may have contamination. There are two types of discharge permits: general, and site specific. The general discharge permit is required to discharge waste containing possible contaminants and if the operation fits into certain categories and size groups. The general permit is good for five years and a small fee is required. The site specific permit is required if possibly contaminated water is discharged 30 days or more per year, and it considers the unique circumstances of the farm and the type and amount of fish raised. The site specific permit is also good for five years and is more costly than the general permit. DNR has regulatory water tests and monitoring concerning these permits. The discharge permits are part of the NPDES.

Discharge of solid waste can be handled in many different ways. It can be disposed of at a landfill. The DNR Solid Waste Management Program (SWMP) provides a list of permitted landfills and transfer stations in the state. Burning solid waste requires an incinerator permit issued by DNR. Proper management can also decrease the amount of solid waste. DNR recommends composting the solid waste for land application. When dealing with hazardous (ignitable, reactive, toxic, or corrosive) wastes, the producer must follow the law when disposing of it. To dispose of hazardous waste, contact DNR for more information and assistance. TAP provides site assessments that help identify and manage hazardous wastes. Some pesticides are known as “restricted use” that require an individual to have a Certified Private Applicator License to purchase and use them. There are no fees and the license is good for five years.

(See solid waste/effluent discharge flow chart)

Production Permits

If planning to use chemicals or drugs for the operation, FDA must approve them. Only four drugs used for aquaculture can be purchased at this time. The drug regulations depend on the use of the product as food or non-food. If importing Salmonoid species (including eggs and gametes) into the state, MDC requires a permit. There are no fees required. If the producer processes the product before selling it, that individual or an employee must be Hazard Analysis and Critical Control Point (HACCP) certified. The FDA for finishing a product requires this certification. HACCP identifies and corrects potential problems concerning food safety. The fees and specifications can vary greatly for this certification. At times when producers feel it's necessary to trap predatory mammals out of season, a special permit must be obtained by MDC. If migratory birds are a problem, special permits must be obtained from the USFW before shooting them. If planning to culture native frog or turtle species, a Class I Wildlife Breeders

Permit is required by MDC. MDC sets confinement standards and requires records on all transactions for the operation, which is subject to inspection by an authorized agent at anytime.

The fee for this permit is \$50.

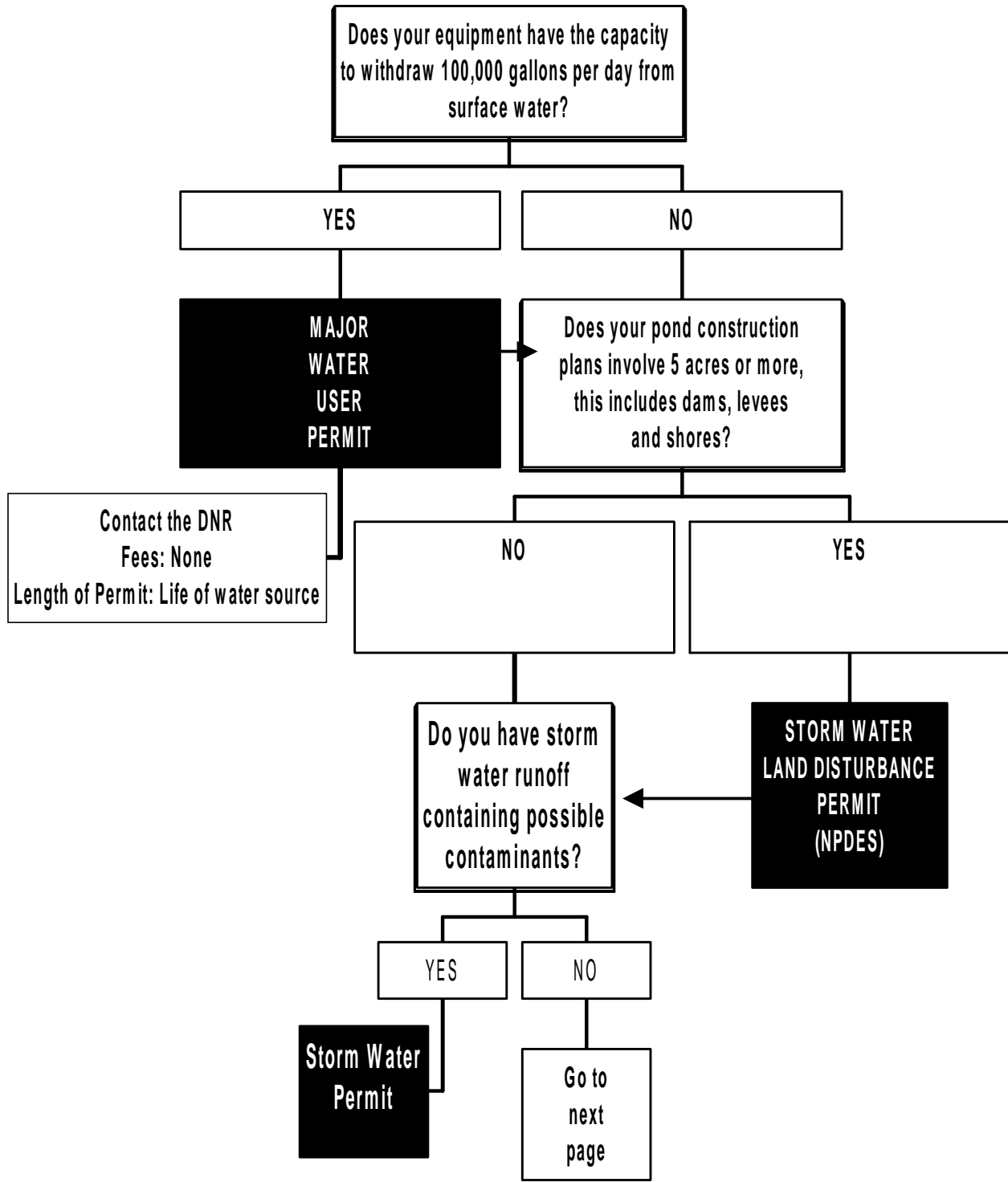
(See production permits flow chart)

Marketing Permits

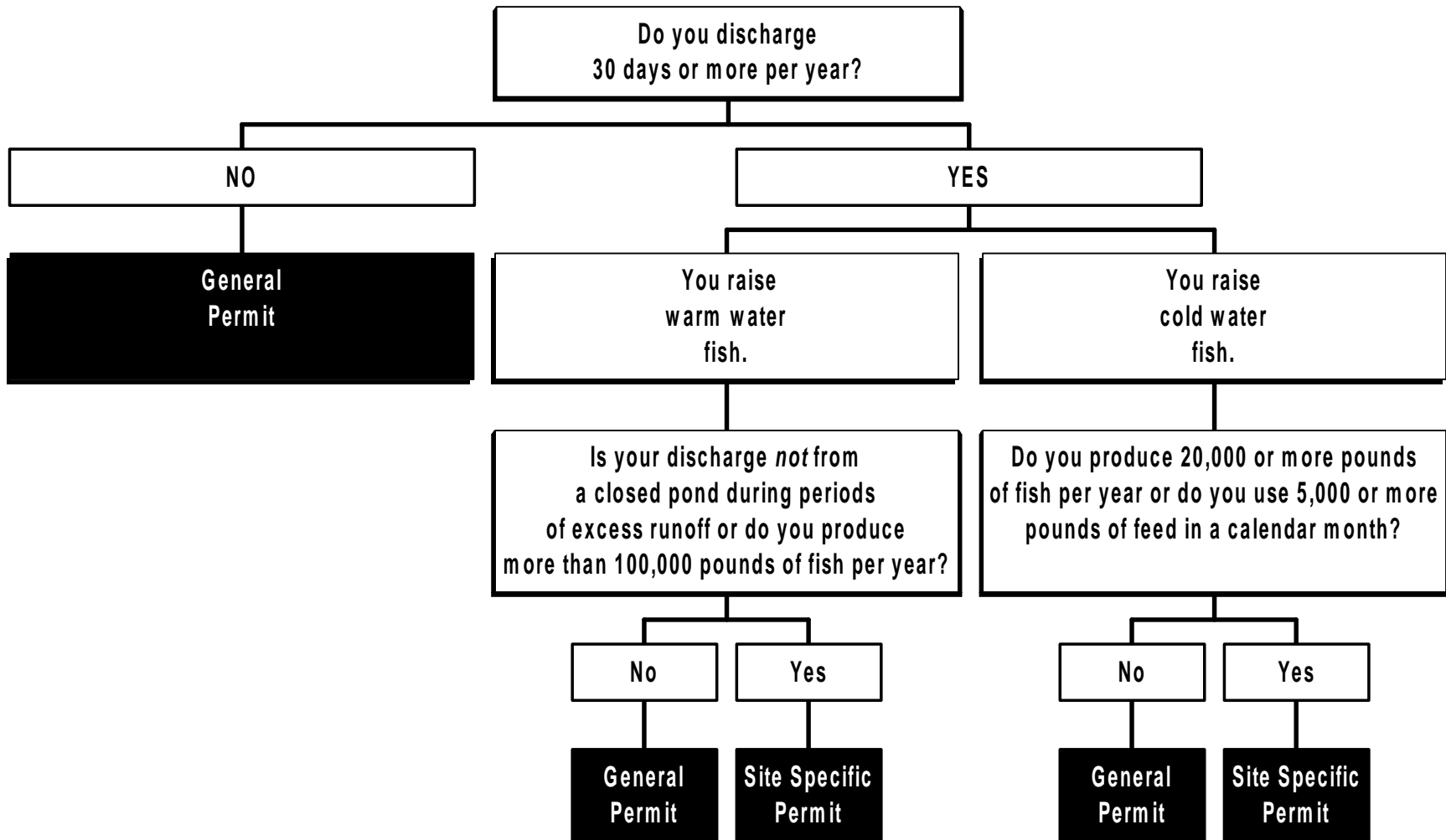
To sell the product at retail; the producer is required by the DOR to obtain a retail license and sales tax registration number. The fees required can vary. The United States Department of Interior (USDI) requires a permit for an individual who imports or exports fish, or other fish products which exceed \$25,000 annually. Applications must be filled with USFW, and the Division of Law Enforcement. If any fish transport vehicles have built in oxygen tanks, they require a permit from the DOT.

(See marketing permits flow chart)

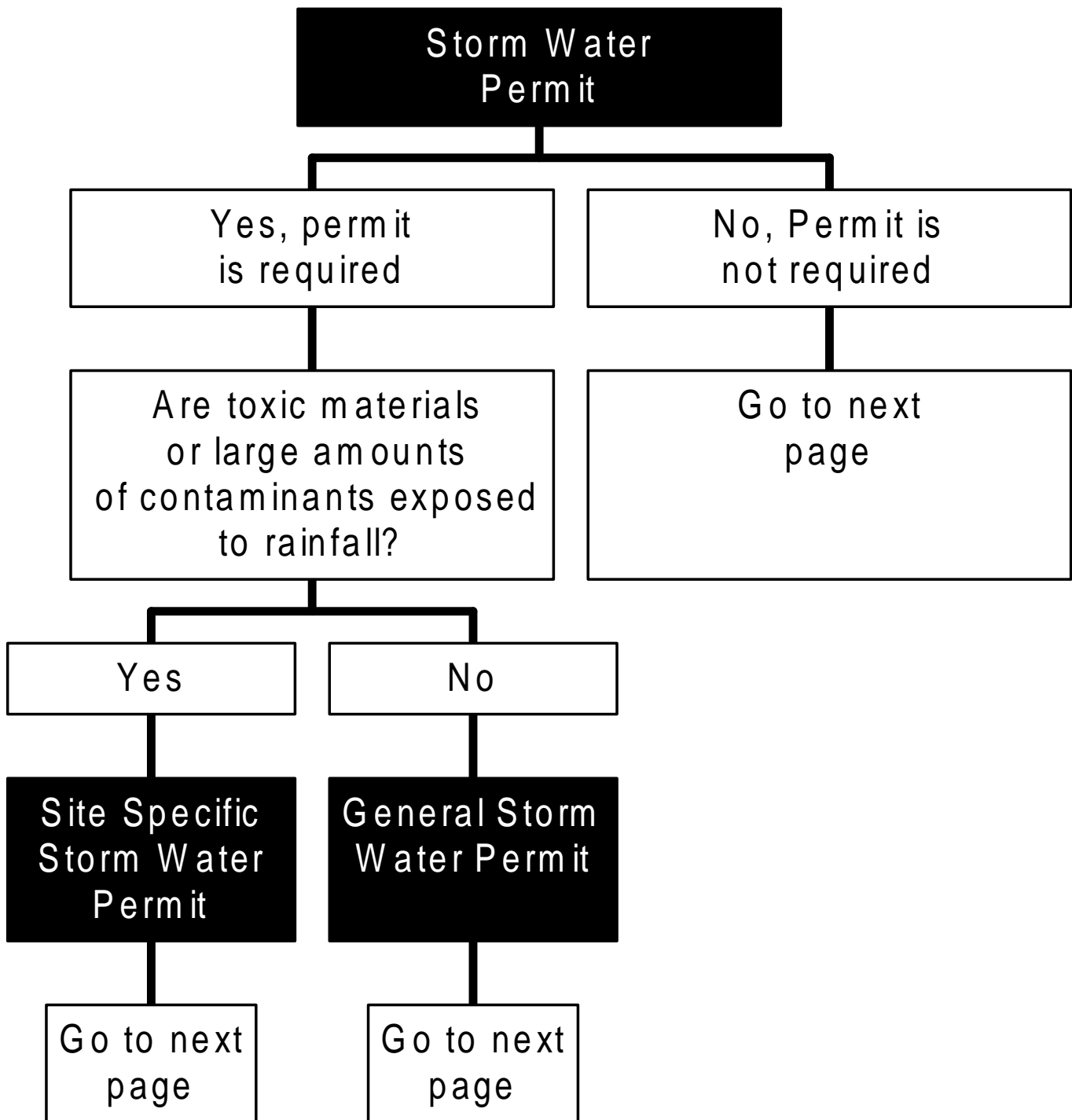
Permits Involving Water Use



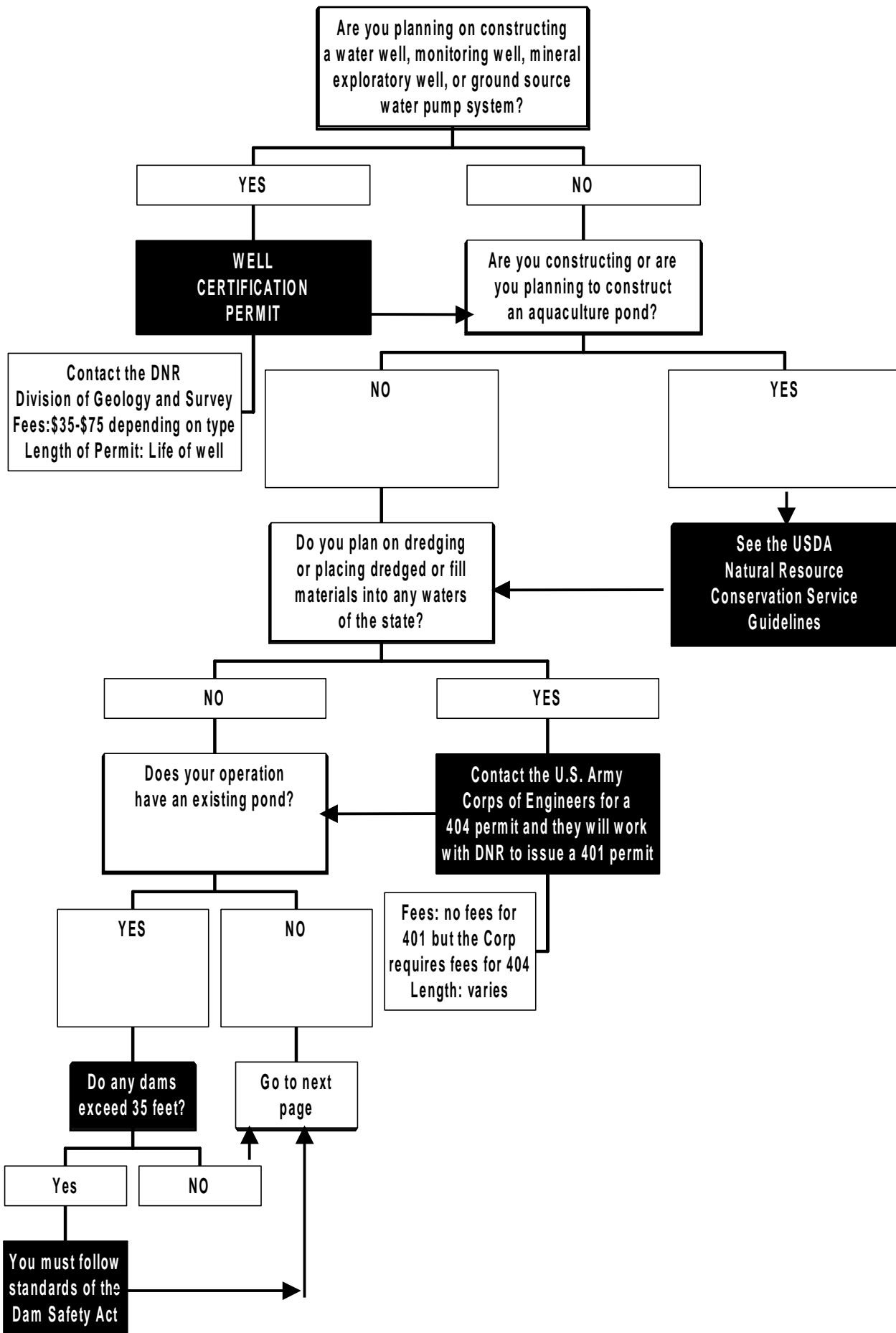
Continued Permits Involving Water Use



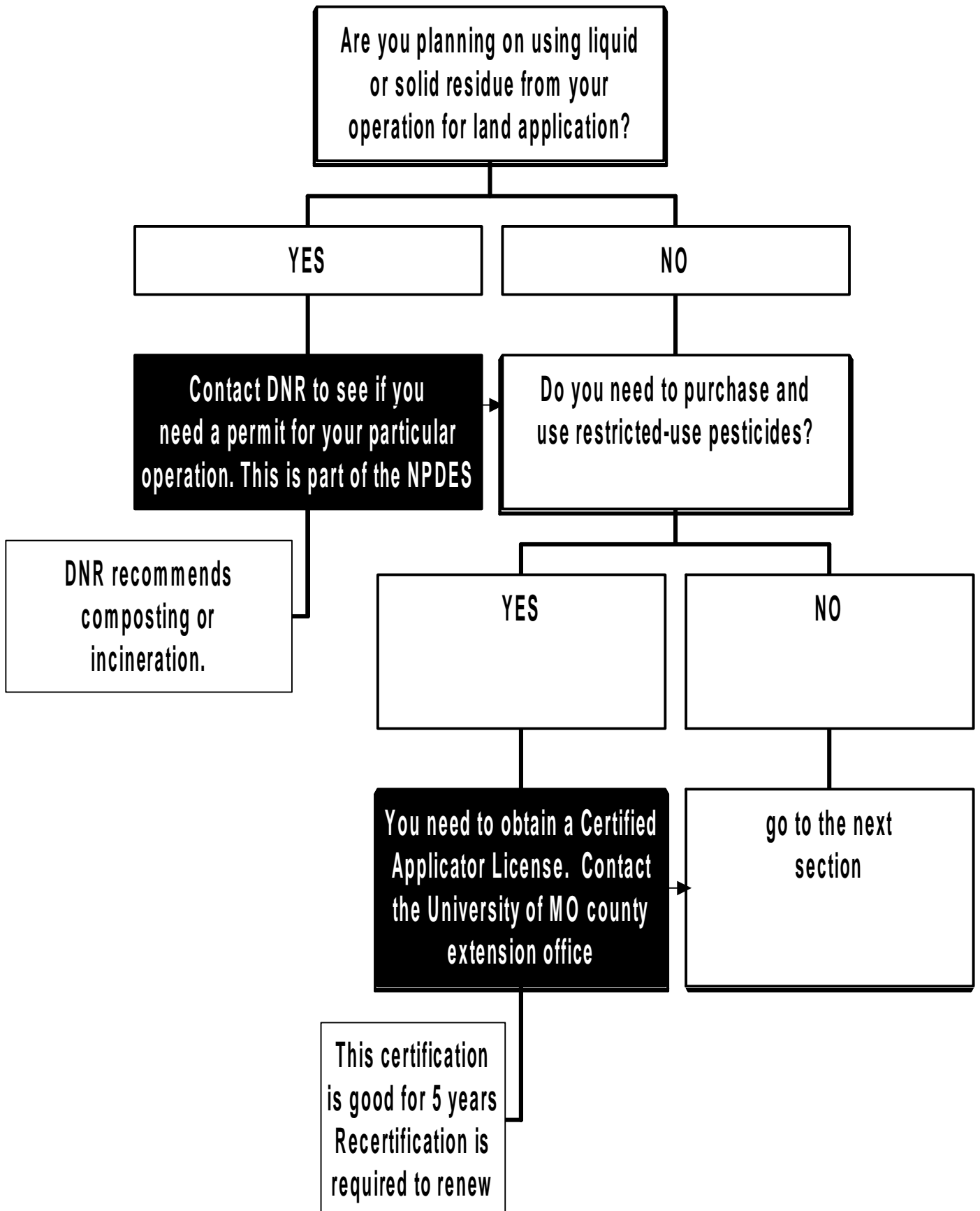
Permits Involving Water Use



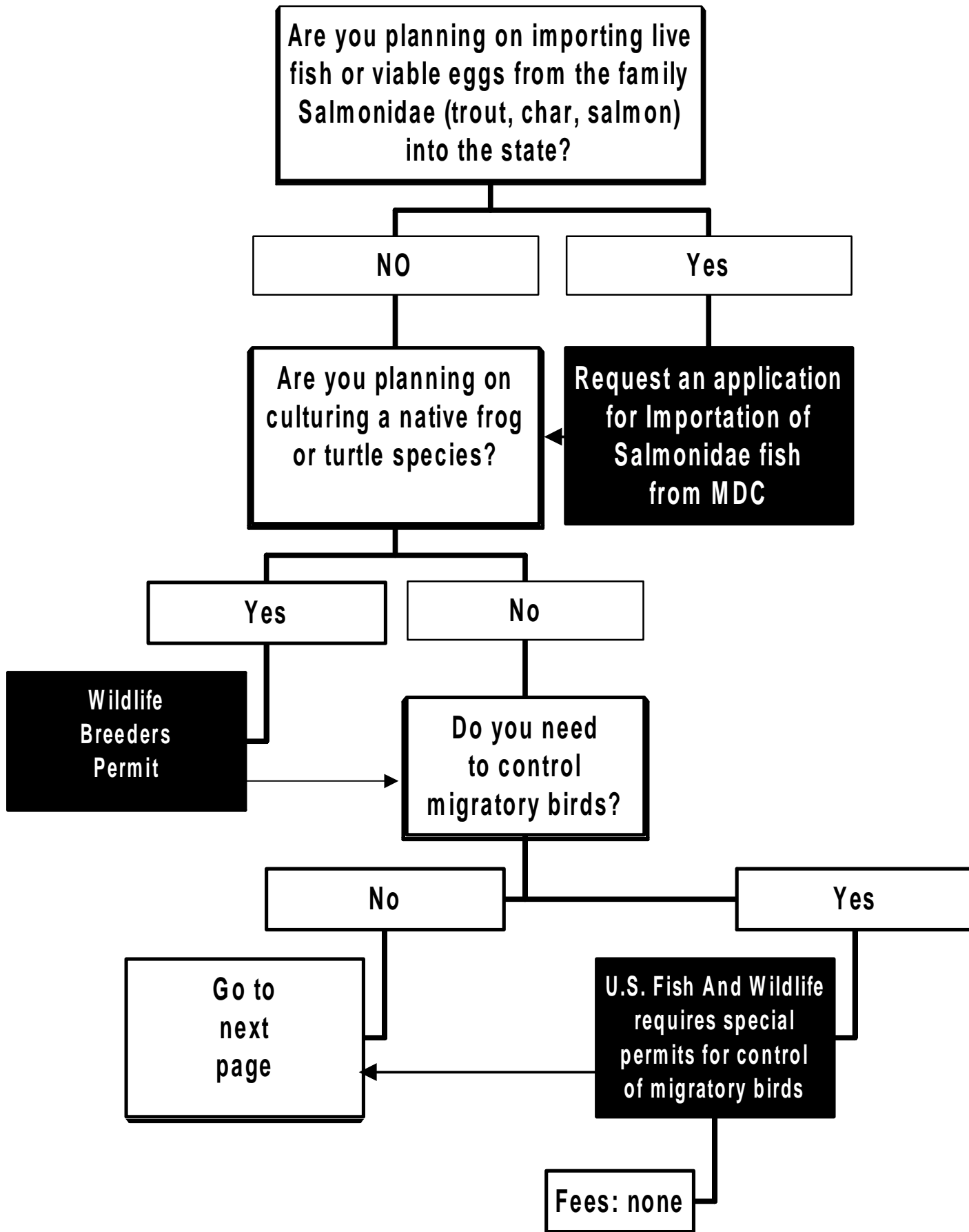
Continued Permits Involving Water Use



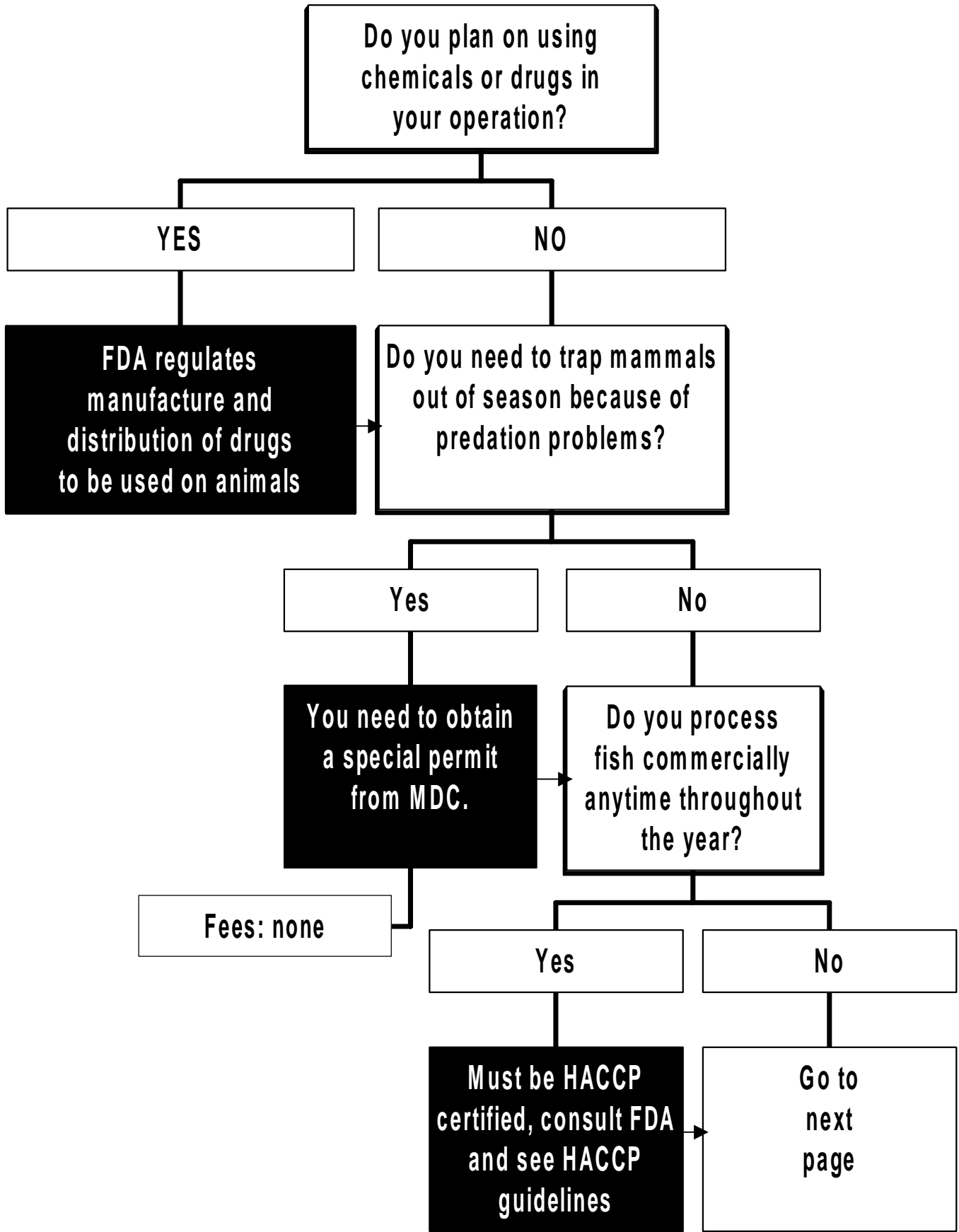
SOLID WASTE /EFFLUENT DISCHARGE



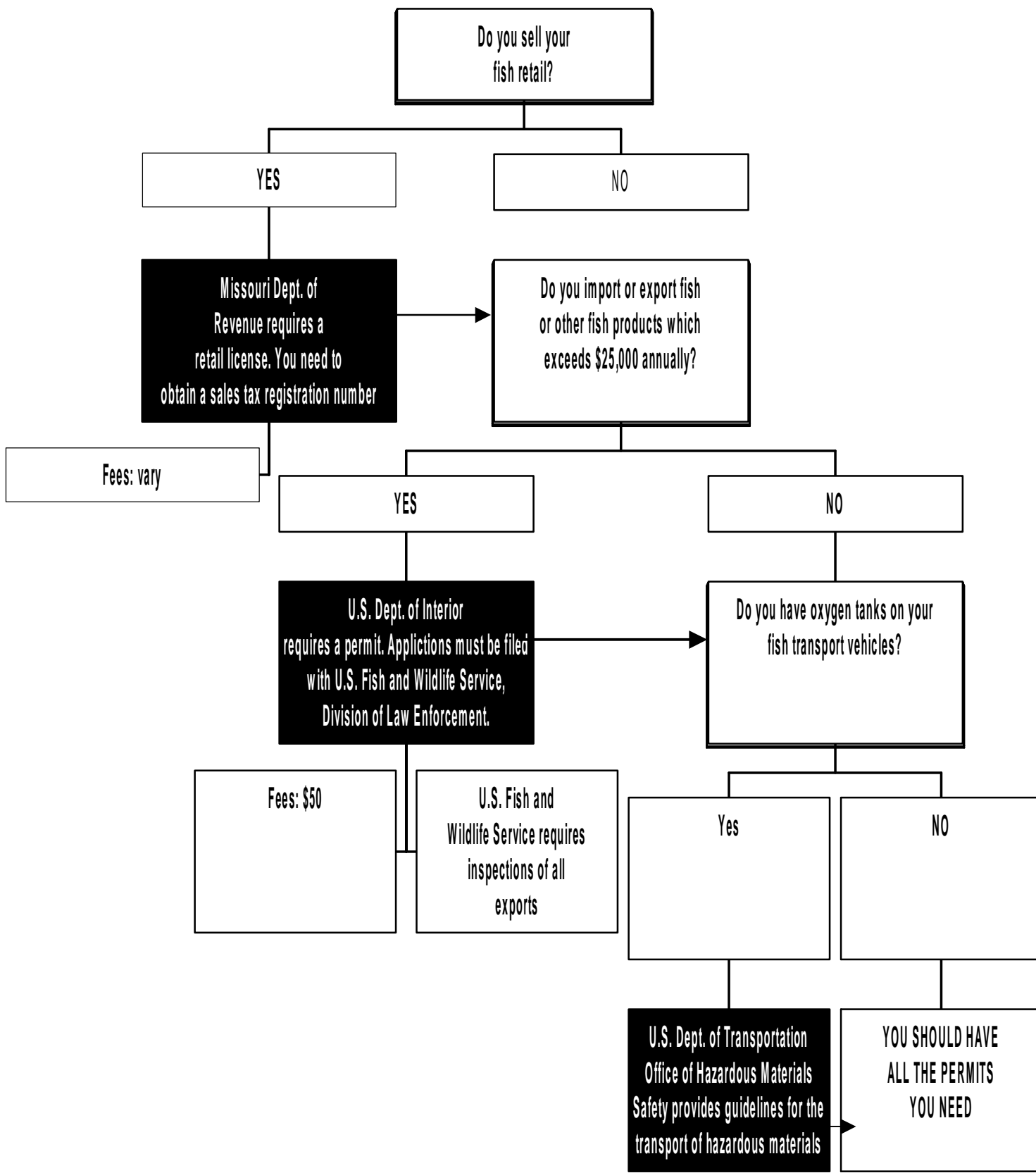
PRODUCTION PERMITS



CONTINUED PRODUCTION PERMITS



MARKETING PERMITS



Glossary of Acronyms

1. ACE – Army Corp. of Engineers
2. DNR – Department of Natural Resources
3. DOR – Department of Revenue
4. DOT – Department of Transportation
5. EPA – Environmental Protection Agency
6. FDA – Food and Drug Administration
7. GLS – Geology and Land Survey
8. HACCP – Hazard Analysis and Critical Control Point
9. MDC – Missouri Department of Conservation
10. NASS – National Agricultural Statistics Service
11. NPDES – National Pollutant Discharge Elimination System
12. NRCS – Natural Resource Conservation Service
13. TAP – Technical Assistance Program
14. USDA – United States Department of Agriculture
15. USDI – United States Department of Interior
16. USFW – United States Fish and Wildlife

Resources

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3. **Census of Aquaculture**. 1998. United States Department of Agriculture, NASS.
4. **Code of Federal Regulation**. United States Government. Title 7, Volume 13, Part 1940 to 1949. January 1, 1997.
5. Goldberg, Rebecca; Tracy Triplett. 1997. **Murky Waters: Environmental Effects of Aquaculture in the United States**. Environmental Defense, New York, New York, USA.
6. **Missouri Aquaculture Environmental and Regulatory Guide**. Missouri Department of Natural Resources, Technical Assistance Program. September 1999.
7. Moore, Allan; Mike Mason, Joe Morris. 1992. **Getting Started in Aquaculture Enterprises. In Managing Iowa Fisheries**. ed. Laura Millar. Iowa State University, University Extension, Ames, Iowa, USA.
8. **Wildlife Code of Missouri: Rules of the Conservation Commission**. March 1, 2000. Missouri Department of Conservation.

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