

## Chapter 4

### Safety & Trespass

#### *Level 1 Volunteer Water Quality Monitoring Training Notebook*

**We recommend that teachers cover safety issues in the classroom and include these instructions and the safety data sheets with all chemistry kits used by students.**

#### **General Precautions**

*Read the Safety Data Sheets (SDS) and note precautions and spill procedures. SDS are required by law to inform individuals about the hazardous nature of any chemicals with which they may come into contact. Keep the SDS handy in case of spills or accidents. Teachers should keep SDS in the kits at all times and keep a copy on file at their school. Additional copies of SDS are posted on the Stream Team Website ([www.mostreamteam.org/datasheets.asp](http://www.mostreamteam.org/datasheets.asp)).*

*Store all equipment and chemicals out of the reach of young children and pets. If there is a possibility that children may access chemicals, they should be locked in a secure place. The same is true for containers holding spent reagents.*

*Always wear gloves and safety glasses when performing the Dissolved Oxygen, Nitrate, Ammonia and Phosphate tests. The chemical reagents that pose the greatest human health threat are contained in the nitrate kit (cadmium reagent) and Hach NI8 ammonia kit (Nessler's reagent containing mercury). If you have a Hach NI8 kit, please return it. There are also hazardous (acidic) reagents in the phosphorus kit. Use extra caution with these kits if they are used as part of your monitoring effort.*

#### **Protection for Yourself and Your Equipment**

- *Use Proper Techniques at all times.*
- *Read all chemistry kit instructions and become familiar with the test procedure before you go into the field. We recommend that volunteers practice chemical monitoring in the home or classroom using tap water or any other readily available source of water.*
- *Avoid contact between chemicals and skin, eyes, nose and mouth. Do not eat, drink or smoke while performing chemical analyses.*
- *Wear safety goggles and gloves when handling chemical reagents.*
- *When performing analyses outdoors, be aware of wind direction. When measuring and adding reagents, stand with the wind to your side. This will prevent the chemical from accidentally being blown into your face.*
- *Use the caps on test tubes when instructed to do so. Do not cover a test tube with your finger when shaking or mixing.*
- *If a chemical spill occurs, follow the instructions included in the Safety Data Sheet. Due to the small amounts of reagents in the chemical packets and because analyses are generally*

performed outdoors, cleaning or recovering the material is not always possible. However, continue to avoid contact with skin, eyes, nose and mouth.

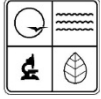
### Other Considerations

- Always wear some kind of *foot protection*. Never go barefoot in the stream while doing volunteer monitoring. River sandals are also not recommended. Boots or old tennis shoes provide greater protection from glass, tab tops or sharp stones that could cause injuries.
- *If your section of stream is deep, always wear a life jacket*. If the current is swift, which frequently occurs after heavy rainfall, and the water is above your knees do not enter the stream. Maintaining your balance in deep, rapidly flowing water is sometimes difficult. We recommend chemistry analyses only be performed on a grab sample taken from the bank or a bridge under these conditions.
- *The stream may contain pathogenic bacteria, viruses or parasites. Therefore, follow these cautionary tips:*
  1. Check with your family physician or county health department to discuss appropriate immunization.
  2. *Avoid water contact with your eyes, nose and mouth*. Do not rub your eyes or bring your hands to your mouth until after you have washed your hands with soap and warm water.
  3. *Avoid contact between the water and any breaks in your skin* (e.g., cuts, broken blisters, open sores, etc.).
  4. *It is advisable to carry hand sanitizer or wet wipes when you monitor*. This will allow you to clean your hands immediately after monitoring.

### Use Common Sense

Accidents happen when least expected. An accident may be the result of an unsafe act such as standing up in a canoe or an unsafe condition such as a leaking canoe. These situations can be related when an individual's *unsafe act can result in an unsafe condition* for someone else. *Use common sense while monitoring, and do not put yourself or anyone else in jeopardy.*

- Be sure that when you go out to monitor, someone knows where you are going and when you plan to return.
- Wear light or brightly colored clothing so you will be easily located in case of an accident.
- Use the buddy system. Monitoring is more fun when you have a partner and it goes faster, too.
- Containerize nitrate waste separately in a heavy-walled plastic container. *Do not mix nitrate waste with other chemical waste*. Clearly label the content of containers with permanent marker.
- If the weather is bad, stay home and monitor another day. No amount of data is worth your health and safety. Do not go out under flooding conditions or in extreme temperatures.



## Frequently Asked Missouri Water Law Questions

Water Resources Center fact sheet 11/2006  
PUB001352

**DISCLAIMER:** While we have strived to provide accurate information to the best of our ability, statutes and judicial precedents do change. The answers provided below may not reflect current statutes, ordinances, policies, judicial holdings or precedents, nor necessarily reflect the positions of the State of Missouri or the Department of Natural Resources. **It is recommended that you consult a competent attorney who specializes in the field of environmental law on issues concerning liability. This quick guide does not constitute legal advice.**

### **What's the difference between riparian and prior appropriation water doctrine?**

Riparian means the landowner has an inherent right to a reasonable use of the water, but no one owns the water. All riparian landowners have equal rights and may make use of the water in any reasonable and lawful manner. Under prior appropriation water doctrine, the water is generally recognized as being owned by the state. An individual wanting to use the water must first get approval from the state controlling authority.

### **Why doesn't Missouri have statutory laws regarding water use?**

Since before Missouri became a state it has been the custom and tradition that riparian water law is developed within the domain of the judicial branch. Riparian water law is published in judicial holdings (court records). Prior appropriation water law is commonly legislated (statutory). Also, Missouri riparian water law is what is commonly referred to as restrictive. This means a person is legally allowed to use the water in any way for any legal and reasonable purpose until a court restricts that use. Under permissive laws only that activity that is clearly provided for in a statute, judicial holding, or some other legally binding policy is allowed and all uses that are not provided for are prohibited. Prior appropriation water law is typically permissive.

### **How am I supposed to know what water uses are and aren't allowed, if it isn't in the statutes? Where do I find information on Missouri water law?**

The actual law is published in court records. Libraries, especially legal libraries at law schools, are the first places to start your research. There are many other publications that deal with water laws that can be found in legal libraries. Many are authored or published by law school professors, industry organizations, the state bar associations, and advocacy associations. The publication, *A Summary of Missouri Water Laws* can help serve as a general guide. Environmental law, property law, and water law are specialty fields in the legal profession.

### **A wetland (or an endangered species) has been identified on my property. What are the water law implications?**

If the wetland is somehow connected to "waters of the United States," the Clean Water Act may protect it. If an endangered species is on your property, the Endangered Species Act provides certain protections for that species. You need to spend some time doing research as to specific land use

restrictions to which you may be liable. It would be a good idea for you to consult an attorney and contact the appropriate state and federal agencies. There are certain things you can not do with the land that you own.

**I am having problems with flooding (or siltation) from water backing up (or washing down) onto my property from a neighbor. What can I do?**

As with most water problems, the first advice is to discuss the situation with your neighbor. Failing that, your next recourse is to talk this over with your attorney. If necessary, you may have to go to court. In this situation your neighbor is infringing upon your property rights by causing flooding and siltation, but this does not give you the right to infringe on your neighbor's property or his rights.

**I own my property so why can't I do what I want with my own land?**

You can, but only up to that point where your actions infringe upon the rights of someone else. You may use your property in any legal, beneficial way that you choose. Your rights stop where someone else's rights begin or where the law says "no." Water law is a balance between the rights of the individual and the needs of society.

**My neighbor put in a new well and now the water level in my well has dropped. What can I do?**

You need to determine if the events are linked or if they are just coincidence. The two wells may be connected by either a diffused water table or by an underground stream. Dye tracing is the most common method to determine if an underground stream connects the wells. The courts have said that invasive methods, such as excavating a trench, can not be used. If your wells are connected by a diffused water table, there is little that can legally be done. You will probably have to drill your well deeper or drill a new well in a different location. If it is determined that an underground stream connects your and your neighbor's wells, then the same rights to the use of the water apply as if it were a stream on the surface.

**I have an upstream neighbor who is using all the water in a stream that crosses my property. Are there any remedies?**

First try discussing the situation with your neighbor. Failing that, you will need to turn to a lawyer. In Missouri case law, your neighbor has a right to the reasonable use of the water in the stream. You and all other riparians also have the same right to reasonable use of the water. The courts have consistently said that they will decide what constitutes reasonable use, and will do so on a case by case basis.

**What rights do I have to keep floaters (or fisherman or canoers) off my property (or lake or pond or stream)?**

Many water use questions involve private property rights. As a property owner, you have the right to choose who may and may not come onto your property. Those who walk or drive onto your property without your permission are trespassers. You may consider posting your land with signs, or purple paint. This warns any potential trespassers to stay off. If the lake or pond is entirely on your property, and not a part of a navigable stream system, you have the right to keep trespassers off it as well. Contact your county sheriff to deal with trespassers. If your stream is floatable, the canoer has a right to float past your property on the water, but not to trespass on your land. If you own both sides of the stream and the bed of the stream, a fisherman walking on your streambed may be trespassing on your land. Each situation has its own conditions that may apply. Visit a law library or consult an attorney.

**What's the difference between surface water, diffused surface water, flood water and ground water?**

Surface water is water that lies at or on the surface of the ground. Diffused surface water is water that is

spread out across the surface of the ground before it enters a lake or stream and before it soaks into the earth. Floodwater is water that “piles up” when trying to enter a stream or overflows the banks of a swollen stream and inundates lands that are usually dry. Groundwater is that water which is found below the surface of the ground and is diffused through the ground strata (percolating groundwater) or flows in an underground stream. Please note that the judicial definition of surface water does not include water in rivers and streams, but the statutory definition does. The courts typically refer to rivers and streams as “watercourses.”

#### **What’s the difference between springs, percolating groundwater and underground streams?**

Springs are considered groundwater until they emerge at the surface and become surface water or until it forms, merges or mingles with a watercourse. Percolating groundwater resides in (and slowly moves through) the spaces between soil particles and rocks in the earth beneath the surface of the ground. An underground stream moves through the subsurface land in the manner similar to that of a surface watercourse.

#### **What is the legal-defined difference between streams and lakes?**

A stream is a watercourse that drains a watershed or basin and has a beginning point (head) and an end point (mouth) which usually joins with a larger stream. A lake is generally a static body of water held back by some kind of dam and is fed by a stream or surface runoff. Also, generally speaking, a stream is a flowing body of water and a lake isn’t. In Missouri most lakes are man-made and most watercourses are natural. Missouri does have some natural lakes, mostly old cut off arms of rivers that are located in flood plains.

#### **Why doesn’t the statutory and judicial definitions of surface water agree?**

As far as can be determined, state statutes are aimed chiefly at regulating pollution and providing legal authority and guidance to the state agencies and commissions who enforce them. Judicial definitions, on the other hand, are more often oriented to individuals, citizens and property owners. While there are discrepancies, they seldom cause problems in the real world. To our knowledge, neither the courts nor the legislature has ever addressed the differences in definitions.

#### **What does the term “navigable waters” mean and what’s the difference between “state navigability” and “federal navigability”?**

A navigable stream is generally defined as one which can be floated without undue difficulty in the lawful pursuit of commerce or recreation – state definition. A federally navigable stream is one which has been identified by Congress or other lawful agent of the federal government as able to be or is actually being used in the lawful pursuit of commerce (see the US Constitution’s Commerce Clause) to move economic goods and commodities. For a better understanding of this refer to *A Summary of Missouri Water Laws*.

#### **Why doesn’t the state have statutes that help and protect the rights of landowners? Floaters and canoers? Agricultural irrigators? Water withdrawal users? Non-consumptive users?**

Just because there aren’t statutes, doesn’t mean there aren’t laws. Because Missouri is a riparian state, water use laws are not codified in state statutes, but rather are explained in state and federal court decisions. This system of water law is characteristic of riparian water law throughout much of the eastern half of the United States and is one of the differences between riparian and prior appropriation water law. Actually, there are some statutes that protect landowner rights. For example, a landowner has the right to drain his land for sanitary or agricultural purposes. Remember to bear in mind that water rights are different than landowner rights, but the two interact with one another. Also, there are court decisions that provide rights to floaters on streams.

**How much water can I legally withdraw from a stream? From a well? From a spring? From a lake?**

Under riparian water law you may withdraw as much as you need or want so long as your withdrawals do not adversely impact another riparian user.

**The stream is cutting deeper into my property, with the result that I am losing land and the landowner on the opposite side of the stream is gaining land. What can and can't I do about this?**

Depending upon property ownership and the upstream and downstream impacts, you may or may not have the right, or may not want to risk the liability. It must be determined if this is a property issue or a water issue. Physically, there are things that can be done, but messing with the stream flow can be a complicated and risky business both environmentally and legally. A river or stream has a dynamic (hydraulic) action and if you alter it in one place, you can cause something else to happen somewhere else. See if you can determine what is causing the stream to cut into your bank or what has changed to cause this. Sometimes upstream development will increase runoff or otherwise alter the hydraulics. There are specific laws addressing avulsion, accrual, accretion and erosion.

**Can I build a berm at the corner of my land to keep water from backing up on my land from my neighbor's?**

Protection of your property is allowed, but only so far as your actions do not adversely impact your neighbor's property, or his or her right to use it. The best course of action, even though you own your property, would be to talk to both your uphill and downhill neighbors before you build your berm. Make sure that the berm you build doesn't significantly change the flow of water from your property onto theirs.

**The local water district is running a supply line in front of my property. Do I have to hook up to it?**

The answer depends on several other things. The water district could be under a county order or ordinance that requires you to hook up. Generally, the answer is no, but you should ask yourself what is in your best interest and those of your neighbors and community. Get the facts and make an informed decision.

**I have a septic tank and leach field in my back yard. The county is running a sanitary sewer line by my property. Do I have to hook up to it?**

If your system is working properly, you may not have to abandon it. If it fails you will have to fix it or hook up to the sanitary sewer line. If you choose to repair it, depending where you live, you may need a construction permit from the county or city. Sometimes, a local ordinance will set a time limit for homeowners to hook on to the sewer system. You should not only consider what is best for you but also what is best for your neighbors, community and the environment. Get the complete facts from your local city or county health agency and the State Department of Health and Senior Services.

**The stream in my back yard is my property line. The stream is eroding part of my property, and filling another part of my property, as it runs along. What does this do to my property line?**

If your property title is based on the location of the stream, then your property line changes over time as the path of the stream changes. If your property line is based on measured survey designations, then the location of the stream is irrelevant to your property boundary.

**The river seems to flood more often, and deeper than it used to. My farm levee no longer seems adequate. I want to build it higher. Are there any rules that govern this?**

For the most part, no. However, there are many ramifications to levee building you should consider. You

should first talk to your neighbors and might even want to discuss it with a lawyer. If you are where the Corps of Engineers Levee Rehabilitation Program might be used by your neighboring levee owners, you may want to be part of a levee district under state law. This would enable the district to raise money for levee maintenance, essential to qualify for the Corps program if the levee is damaged in a flood. You should do some checking so that you not only build your levee right, but you also don't cause problems for your neighbors.

**My neighbor on the other side of the river (or stream or creek) built a new levee (or increased the height of her existing levee) and now my land gets flooded more often and the floodwater is deeper.**

**What can I do?**

Talk to your neighbor, and if this doesn't work, consult a lawyer. You may have grounds for a legal cause of action. Missouri water law no longer observes the common enemy doctrine relative to floodwaters and levee protection.

**My neighbor did some landscaping (or land improvement or trenched a drainage ditch) on her property and now my property gets flooded. Can I do anything about this situation?**

Your neighbor has the right to drain her land but she does not have the right to dump water on your property. Try talking with her first, and failing that, consult a lawyer. One of the things that will have to be determined is whether the flooding that you are experiencing is a result of your neighbor's activities, something that you have done to your property, or just a natural occurrence of nature.

**My lower 40-acres are underlain by drainage tile that my grandfather installed years ago. A friend told me that the outlet for the drainage is considered a "point source" of water pollution. Is this for real? Does this change anything?**

Is the drainage from the outlet pipe actually polluted water? Ascertain this, first. Any water that drains from a pipe is considered a point source; whereas diffused surface water is considered a nonpoint source. Generally, agricultural drainage is regarded as nonpoint. Like other definitions, this is subject to legal interpretation and changes in the law, as states work to clean up environmental pollution and address runoff.

**I farm 260 acres. A big corporate livestock factory is going in on the uphill side of my property. Do I have any rights relative to stormwater runoff onto my property?**

There are Missouri statutes that clearly spell out what concentrated animal feeding operations may and may not do. As a general rule held in most every court decision, you pretty much have the right to use and enjoy your property as you wish. This includes being free from excess water drainage, pollutants, and silt washing onto your property – no matter who your uphill neighbor is. The courts have addressed many similar situations.

**The road and street department has installed a culvert that allows stormwater runoff to concentrate on the low part of my property, and now water has been into my house, twice. A little work could provide a drainage, so it doesn't flood my house. Who's responsible and do I have any recourse about this?**

Try talking to the local officials, first, and find out if they will correct or help you with the problem. You may want to talk to your neighbors to determine if they are experiencing the same problem.

You may need to talk to your lawyer. There is precedent for making government fix water runoff problems that it causes.

**I want to build a marina near the mouth of River A, where it empties into River B. I want to be able to provide a dump station, potable water source, and mooring. Are there any laws I need to be aware of?**

There are health laws, road-building laws, water safety laws, drinking water and sewer laws, building construction codes, and perhaps others. You are talking about a navigable stream and the U.S. Coast Guard has responsibilities on navigable waters of the United States. Taking time to thoroughly discuss your plans with your lawyer, your insurance agent, your lender, your general contractor and your architect or engineer will help prevent problems later on.

**There is a stream I know of that is really beautiful that I really want to float, but it crosses private property. Can I go ahead and float it? While floating can I fish while my kids wade and swim? And when the kids need to go to the bathroom what should we do? How about a shore lunch or camping on the stream bank?**

First, you need to find out if the stream is navigable under state law (a floatable stream) and if the streambed is owned. Trespassing onto private property is always a bad move. You should locate the owner of the property that the stream crosses and talk to him before you start your float trip. Request permission to picnic and camp on the streambank, assuring him that you will clean up after yourself. Don't give him a reason to be sorry he allowed you to build a fire, picnic, and camp on his land. Always properly dispose of all trash and waste. Another good rule of thumb is to place yourself in the landowner's shoes. What would you expect and how would you like to be treated? Remember that common sense goes a long way in avoiding conflicts and problems. Also, don't forget to purchase a Missouri fishing license and find out from the Missouri Department of Conservation about fishing seasons and limits on streams.

In conclusion, most water problems or issues can be avoided or corrected if one acts with forethought and reasonableness. This approach can help avoid misunderstandings, hard feelings, actual damages and the costs of litigation. Talking to a neighbor and coming to a mutual agreement usually costs a lot less than suing him, and usually results in a better solution. It may also be a good investment of time to visit a library or go on-line and do some first hand research on your own. Doing so will not only give you a better understanding of the specifics which you seek, but also the general conceptual foundations which make up riparian water law. Many of the issues addressed here are covered in the DNR publication *A Summary of Missouri Water Laws*. To purchase a copy, call (573) 368-2175, or use this link at [http://dnr.mo.gov/env/wrc/water\\_res\\_rpts.htm](http://dnr.mo.gov/env/wrc/water_res_rpts.htm).



# Missouri's Purple Paint Statute: A New Way To Protect Your Property From Trespassers

By Deanne Hackman  
Research Associate and Adjunct Instructor  
Social Science Unit, College of Agriculture, Food, and Natural Resources  
University of Missouri - Columbia

---

November 8, 1995

**CAUTION:** Do not rely upon this information for legal advice. See an attorney for legal counseling tailored to your specific situation and needs.

During its 1993 legislative session, the Missouri legislature enacted a new statute pertaining to trespassing. The new law, the Purple Paint Statute (RSMO 569.145), provides yet another way for Missouri landowners to protect their property from trespassers. Landowners can still use "No Trespassing" signs, however the Purple Paint Statute allows landowners to mark trees or posts with purple paint as a warning to would-be trespassers. Just like a "No Trespassing" sign or actual communication to individuals that no trespassing is allowed, the purple paint marks are considered to be adequate notice to the public that no trespassing is allowed on the property.

Missouri's law is similar to one that has been used in Arkansas since 1989. These statutes were enacted to provide landowners with an economical and easy way to keep out unwanted trespassers. The law does not require that property marked with the purple paint also be fenced, thus it is an economical alternative for landowners who do not otherwise need to fence their property. Additionally, it prevents a problem encountered when using "No Trespassing" signs -- purple paint marks can't be taken down, destroyed, or stolen!

Because the Purple Paint Statute is new, many people across the state are not yet aware that the statute exists. Regardless, the statute imputes notice to would-be trespassers. All land marked with purple paint in the manner proscribed by the statute is considered to be adequate notice to the public. It fulfills the same function as a "No Trespassing" sign, a fence, or telling someone not to come onto your property.

Under Missouri's law:

- Any owner or lessee of real property can post property with the purple paint marks.
- Purple paint marks must be placed on either trees or posts (the statute does not specifically allow the option of placing paint marks on buildings).
- Vertical paint lines must be at least 8 inches long (the statute does not mention a maximum length).
- The bottom edge of each paint mark must be between 3 feet and 5 feet off the ground.
- Paint marks must be readily visible to any person approaching the property.
- Purple paint marks cannot be more than 100 ft. apart.

The statute provides that any person trespassing onto property marked by purple paint can be found guilty of a first-degree trespassing charge. Any unauthorized entry onto property marked with the purple paint marks is considered a trespass. First-degree trespassing is a Class B Misdemeanor, with potential punishment of a maximum \$500 fine and/or a maximum of 6 months in jail.

Other violations which would subject a trespasser to first-degree trespass are: (1) entering a property posted with "No Trespassing" signs; (2) refusing to leave property once told to do so; and (3) coming onto land fenced against intruders.

Landowners can purchase the purple boundary posting paint at hardware stores across the state. Several paint companies have formulated a latex semi-paste product for the specific purpose of marking property. The paint can be applied in its semi-paste form or sprayed once thinned.

## How to Find Property Owners

If property owners do not live near the potential monitoring site, they often can be located with the assistance of the county assessor's office. The address, email and telephone number for each county assessor can be located at [www.moassessorsassn.org/assessors.htm](http://www.moassessorsassn.org/assessors.htm). The county assessor's office will have a collection of plat maps showing ownership of land parcels. To find the land owner by using plat maps, you will most likely need to be able to locate the stream site property by township, section and range. Section, township and range can be located from USGS topographic maps.

Many counties have interactive mapping software online, which can be found at [www.dnr.mo.gov/gis/](http://www.dnr.mo.gov/gis/) or [www.beacon.schneidercorp.com](http://www.beacon.schneidercorp.com). It is possible to locate landowner information through these web sites.