South Dakota Department of Game, Fish and Parks

Chemical Control of Aquatic Plants: *Information, Regulations and Guidelines*

PERMITS

The South Dakota Department of Game, Fish and Parks does not encourage the destruction of aquatic vegetation. However, we do recognize that aquatic plants may interfere with a riparian property owner's right to reasonable access to open water and recreation.

To balance the needs of conservation and recreation, a **permitting system** was developed. This permitting system requires permission to chemically control aquatic vegetation in public waters and wetlands. Because plants provide many benefits to the water environment, requests to chemically destroy vegetation are limited to areas where plants seriously interfere with recreational use. Do NOT purchase chemicals before receiving a permit

Aquatic Plant Information

Aquatic plants are a natural part of lake ecosystems and provide many benefits to fish, wildlife, and people. Aquatic plants are the primary producers in the aquatic food chain and convert the basic chemical nutrients in the water and soil into plant matter, which becomes food for all other life.

A. Functions of Aquatic Plants

1. ***Provide Fish Food and Shelter***
   More food for fish is produced in areas of aquatic vegetation than in areas where there are no plants. Aquatic plants provide shelter for young fish and offer habitat for nesting and spawning fishes.

2. ***Improve Water Clarity and Quality***
   Certain water plants, like bulrushes, can absorb and break down polluting chemicals. Aquatic plants also maintain water clarity by preventing the re-suspension of bottom sediments.

3. ***Protect Shorelines and Lake Bottoms***
   Rushes, cattails, and other plants can lessen the force of wave action and help prevent shoreline erosion. Submerged aquatic plants also weaken wave action and help stabilize bottom sediments.

4. ***Provide Food and Shelter for Waterfowl***
   Many submerged plants produce seeds and roots which are eaten by waterfowl. Submerged plants also provide habitat to many insect species and other invertebrates that are important food sources for brooding hens and migrating waterfowl.

5. ***Improve Aesthetics***
   The visual appeal of a lakeshore often includes aquatic plants, which are a natural, critical part of a lake community.

6. ***Provide Economic Value***
   As a natural component of lakes, aquatic plants support the economic value of all lake activities. South Dakota has several tourism industries, one focused on lakes and the recreation they support. Residents and tourists spend just under a half-billion dollars in this South Dakota each year to hunt, fish, camp and watch wildlife on and around the state's lakes.

B. Do I Need a Permit?

NO. If you are a lakeshore property owner that wishes to create or maintain a swimming or boat-docking area by cutting or pulling aquatic vegetation, you do not need a permit.

YES. You must have a permit to apply herbicides, algicides, or any other chemical in waters of the state.

Aquatic Plant Control Regulations:

Aquatic Plants growing in public waters are the property of the State. Because of their value to the lake ecosystem, they may not be destroyed by chemical means unless authorized by the Game, Fish and Parks Commission.

South Dakota Codified Laws

Title 41: GAME, FISH, PARKS, & FORESTRY,

41-13: PROTECTION OF FISHING WATERS

41-13-2: Permit required to use plant control chemicals in game fish waters--Violation as misdemeanor—Promulgation of rules.

It is a Class 2 misdemeanor to place chemicals in the public waters of this state containing game fish for the purpose of controlling plants without written permission of the secretary of game, fish and parks. The Game, Fish and Parks Commission may promulgate rules pursuant to chapter 1-26 to safeguard game fish and other animals from the effects of such chemicals.

C. Chemical Information:

- Chemicals are applied in liquid, granular or pellet form.
- Liquid, sprayable forms must generally be mixed with water and applied over the surface area to be treated.
- Granular and pellet formations are distributed by spreader and will sink to the bottom of the waterbody. In some cases, slow-release granules are available and will release the active ingredient over an extended period of time.
- To reduce human exposure to the chemicals, temporary water-use restrictions are imposed in treatment areas whenever herbicides are used. Only herbicides labeled for aquatic use are allowed.

Any use of an herbicide will require a permit from the South Dakota Department of Game, Fish and Parks, and the Department of Agriculture and Natural Resources. Do NOT purchase chemicals before receiving your permit.

- Floating and immersed weeds can be killed with direct sprays on the foliage. Sprays are applied as surface water treatments, particularly in shallow water. The herbicide is then dispersed by wave action.
- Submersed weeds and algae can be treated using sprays or granular formations. Granular formulas offer advantages such as confined treatment areas, slow-release formulas, and low concentrations of chemical if needed.
- We also strongly suggest that any person applying for a permit to chemically treat aquatic vegetation be a licensed pesticide applicator.

D. Common Aquatic Herbicides:

Copper Sulfate
Commonly used to control algae. Copper can interfere with gill functions in fish, and if used improperly can be toxic to fish.

Chelated Copper
(Cutrine®) Used to control planktonic and filamentous algae. Can be mixed with diquat to control certain species of submerged plants as well.

Diquat
(Reward®, Weedtrine-D®) Contact herbicide that can be sprayed on or injected into water to control submerged weeds and filamentous algae. Can also be sprayed on duckweed or emergent vegetation. Not effective in muddy water or on mud-coated weeds.

Endothall
(Aquathol®, Hydrothol®) Available in liquid or granular form. Both are contact herbicides and can be used for spot control or partial pond treatment.

- Hydrothol is more toxic to fish and aquatic invertebrates and controls algae and many submerged weeds.
- Aquathol is generally used in commercial ponds and controls submerged weeds, but is not effective against algae.

Glyphosate
(Rodeo®) Applied directly to foliage and used to control most shoreline vegetation. Most effective when applied during the flowering stage.

2,4-D
Available in liquid or granular form. Granular form is used to control submerged and emergent broad-leaved plants. Liquid formations are used to control floating and emergent weeds.

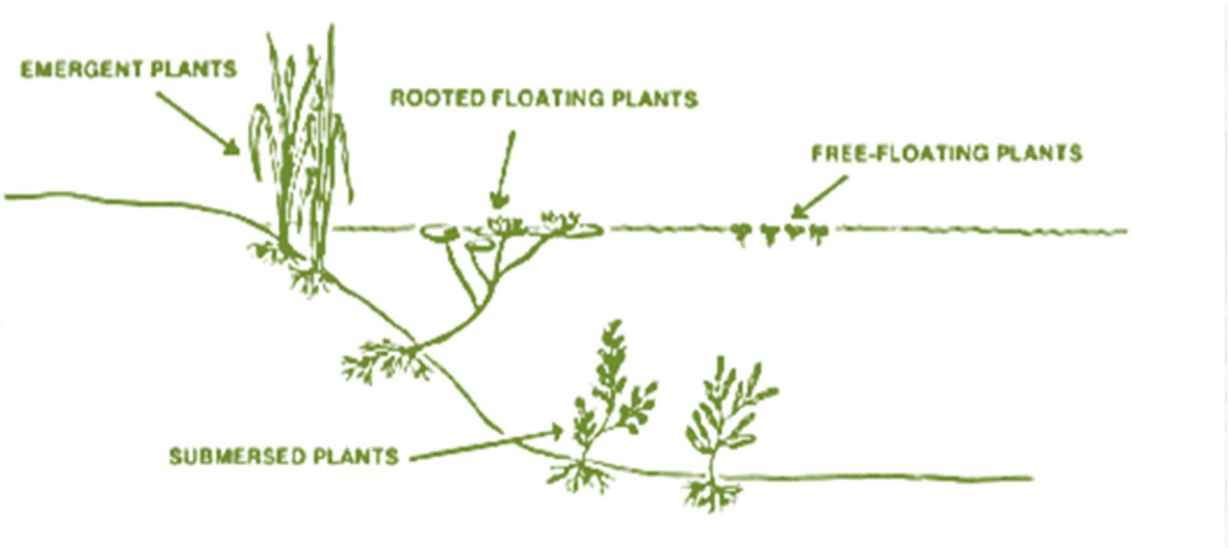
E. What to Consider Before Purchasing Chemicals.

1. Identify the vegetation type you wish to control.

- *Submerged vegetation has stems and leaves that grow entirely underwater,* although some may have floating leaves. Examples include curly leaf pondweed, coontail and milfoil.
- *Floating leaf* vegetation is rooted in the lake bottom, but the leaves and flowers float on the water surface. An example of this type of vegetation is the waterlily.
- *Emergent vegetation* is rooted in the lake bottom, but the leaves and stems extend out of the water. Cattails, bulrushes, spike rushes and other grass-like plants are examples of emergent vegetation.
- *Algae* have no true roots, stems or leaves and range in size from tiny one-celled organisms to multi-celled plant-like organisms. Plankton algae, which consist of free-floating microscopic plants, grow throughout the entire well-lit surface waters of a lake. Filamentous algae are common only where other types of vegetation grow.
- *Free-floating plants* never become rooted in the soil and float free on the water's surface. The most common example is duckweed. The easiest type of treatment for this plant is to eliminate the input of wastewater from sources such as livestock feedlots and septic tanks.

2. Know the restrictions associated with the chemical you choose.

Most aquatic herbicides break down readily and rapidly in water and pose no threat to human or animal health, however there are waiting periods on the use of water treated with most herbicides. Always check label restrictions.



3. Use the correct dosage.

Calculate the dosage carefully and don't overdo it.

4. Timing of treatment.

Late spring is usually the best time to apply aquatic herbicides. The plants are young, actively growing, and susceptible to herbicides. Aquatic vegetation is not affected by herbicides when the water is too cold. The water temperature should be in the 60–70-degree range for most products.

5. Retreatment.

More than one treatment may be required for adequate control. Remember, aquatic plant control is temporary because aquatic plants grow back from root crowns, seeds, and other plant parts.

F. Filling out the Permit Application:

- ***Applicant Information***

Provide your name, permanent address, and lake home address (if applicable), phone number, and indicate if you have ever applied for an aquatic vegetation control permit prior to this.

- ***Waterbody Information***

Provide the waterbody name, county location and the length of shoreline you own.

Permitted Treatment Area Restrictions

Please note that if permitted to chemically treat aquatic vegetation, you will only be permitted to treat an area not more than 50 feet along the shoreline or one-half the length of your shoreline, whichever is less. The permitted treatment area may not exceed 2,500 square feet.

- ***Treatment Information***

List the type AND species of aquatic vegetation you wish to treat.
Indicate the dimensions of the proposed treatment area, the person who will be doing the treatment, the date, and method.

- ***Chemical Information***

List the chemical that will be used, along with the rate of application, the total amount, and the species of vegetation you are targeting. Attach copies of the product label and Material Safety Data Sheets and list any water-use restrictions associated with the chemical.

- ***Additional Required Information***

An aerial photo showing the project area is required, as is a description of the project as outlined in #2.

- ***Notification and Applicant Certification***

Notification and signatures of adjoining property owners are required. Sign and date the application and mail to the address listed on the application. Your application will need to be approved by the Game, Fish and Parks, local Habitat and Access Biologist. Forms filled out on the SDGFP website will automatically be sent electronically to the correct personnel at this link: https://survey123.arcgis.com/share/b11bffb67b9f41cd98bcc1a2fc169531