Healthy Recreational Waters Guidance

June 2025

HealthVermont.gov
802-863-7220

VERMONT
DEPARTMENT OF HEALTH

Vermont's many beaches are ideal places for healthy physical activity. To protect both human and environmental health, the Vermont Department of Health recommends frequent monitoring for a variety of concerns.
The Healthy Recreational Waters Guidance is designed to provide guidance to the managers and users of Vermont's recreational lakes, ponds, streams and rivers. All of us have a role to play in keeping our recreational waters a safe and healthy place for everyone.

Healthy Recreational Waters Objectives:

- Provide swimming area managers a framework for monitoring water quality, and a protocol for addressing incidences of contamination from a variety of sources.
- Provide Vermonters with easy to understand guidance on safe and healthy recreational waters.
- Strengthen partnerships among federal, state, local and private stakeholders.
- Contribute to the overall quality, safety and preservation of Vermont's recreational waters.

This guidance was developed with assistance from subject matter experts from the Departments of Environmental Conservation and Forests, Parks and Recreation.

If you need help accessing or understanding this information, contact AHS.VDHEnvHealth@vermont.gov.

Contents

Factors Affecting Water Quality

Swimming, boating, wading and other healthy outdoor activities should be done at managed, safe and healthy locations. This section will introduce some of the factors that can affect recreational waters and beaches, and methods to reduce health and safety risks.

Biological Contamination

Water contaminated with fecal matter from human or other mammals can be a health risk. Sources of biological contamination can come from leaking or failed septic systems, agricultural, wildlife or pet feces, and bacteria shed by other bathers – especially from dirty diapers of babies or young children.

Human Waste or Sewage (Spills/Leaks)

System failures at sewage treatment facilities, failed septic systems, releases from boat and recreational vehicle holding tanks, pumping stations, damaged sewer lines, and portable toilets can all be sources of biological contamination.

- IMPORTANT: If a sewage spill is observed, restrict access to the swimming area and immediately report the spill to –

  Vermont Department of Environmental Conservation

  802-828-1138 (Monday - Friday 7:45 a.m. - 4:30 p.m.)

  -or-

  State Hazmat Hotline

  800-641-5005 (after hours)

- Identify and reduce as much as possible any other sources of sewage. Monitor for releases of human waste from boats, for example.
- Note that in Vermont, wastewater treatment facilities are required to report, provide public notice, and post signs downstream of any untreated or unpermitted discharge.

Animal Feces (Agricultural/Wildlife/Pet)

- Animals' feces, whether from agricultural manure, wildlife, or pets that are brought to the beach, can be carried into the water from rain, or directly deposited into the water. Consider all potential sources of fecal contamination from animals when managing a swimming area.
- Reduce risk of contamination by restricting animals from swimming areas, or providing clear signs and outreach to beachgoers that they are expected to immediately collect and properly disposal of their pet's waste.

NOTE: It's difficult to tell the difference between the potential health risks that can be caused by human feces and the feces of other warm-blooded animals.

Human feces poses the most risk to other humans. However, the data regarding the potential health risks posed by other warm-blooded animals is more difficult to demonstrate. For the purposes of beach monitoring, the source of *E. coli* is not considered in the evaluation of the result. The U.S. EPA is now evaluating techniques and methods to do so and as they become available, the Health Department will evaluate them.

For evaluating potential sources, human-related sources will be considered the most likely to cause health effects in people.

Other Bathers & Diapers

One of the most common causes of fecal contamination and illness at beaches is actually other bathers. **Anyone who is experiencing diarrhea should stay out of the water.** They risk making others sick by contaminating the water with feces and germs.

- Diapers and swim pants hold in some solids, but they do leak. Children or babies in diapers or swim pants that become soiled can easily contaminate the water. As other children are generally playing in the same area, the potential to spread illness to other children is very high.
- Swim diapers and swim pants are not a substitute for frequent bathroom breaks and diaper changing. Swim diapers and swim pants should be checked every 30 to 60 minutes and changed away from the beach in a designated diaper changing area.
- Children should not be "rinsed" off in the swimming area.

Chemical Contamination

Chemicals from spills or run-off or from natural toxins produced cyanobacteria can pose health concerns.

Spills or Run-Off

- IMPORTANT: Report chemical spills from fuel tanks or other sources immediately to:

Vermont Department of Environmental Conservation

802-828-1138 (Monday - Friday 7:45 a.m. - 4:30 p.m.)

-or-

State Hazmat Hotline

800-641-5005 (after hours)

- Swimming may need to be restricted.

- Storm water or nearby tributaries may also carry fertilizers, pesticides and other chemicals into a beach or swimming area. Identifying and monitoring for potential sources in the immediate area of the beach is recommended for beach managers.

Physical Hazards

Physical hazards can wash up on shore or under the water, particularly after flooding. Debris, trash, broken glass and other sharp objects can all pose injury hazards to beach goers.

- Conduct frequent inspections for the presence of physical hazards.
- Provide waste and recycling receptacles for use and change frequently.
- Discourage the use of glass containers at swimming areas.

Health Guidance

Swimming areas should be monitored or inspected frequently for potential hazards or sources of hazards: trash, spills, debris, cyanobacteria blooms, and *E. coli* bacteria.

Sanitary surveys and routine bacteria monitoring of the water are strongly recommended at managed beach areas.

Sanitary Surveys

The sanitary survey is a key component of a healthy and safe beach. A sanitary survey can help identify and document potential sources of contamination. We recommend that you conduct a survey at the beginning of the recreational season and during the season if there is a change in water quality or environmental conditions (e.g. construction, change in animal policy, or extreme weather events).

The sanitary survey includes observations of general weather, water temperature, visual water quality, bather load and activity usage, discharge sources, waste, algae and wildlife.

Tracking this data will enable beach managers to evaluate swimming area conditions in real time and to compare historical observations.

A model sanitary survey form is included in Appendix A.

E. coli as an Indicator of Water Quality

In 2012, the EPA released an updated Recreational Water Quality Criteria document.

In this scientific review of more than 20 years of data, EPA provided guidance for the density of *E. coli* that would warrant beach notification. The Vermont Department of Health's current guidance is based on this review.

What to test for and why:

In Vermont, *Escherichia coli* (*E. coli*) bacteria is the most used measure of freshwater beach quality for human health. *E. coli* density in water is used as a surrogate to identify if there is recent viable fecal matter present in the water.

Generally, *E. coli* bacteria itself does not present a human health issue, but its presence indicates that there may be other disease-causing germs, from fecal contamination, in the water.

The relationship between the density of *E. coli* bacteria and risk of human illness has been difficult to quantify. What is known is that the more fecal contamination in the water, the more likely someone will get sick. Identifying and limiting the sources of fecal contamination will decrease the risk of people getting sick.

A result in excess of the guidance value for *E. coli* density does not necessarily mean that the beach is unhealthy or polluted. A result above the guidance value means that the beach warrants closer inspection as to the likely or possible cause(s). A result below the guidance does not necessarily mean that the water is 100% safe. Sanitary surveys and frequent inspections are still important, even when results are below the guidance value.

The *E. coli* guidance value is a statistical calculation of when illness is more likely to occur, not a known density at which health effects will occur. *E. coli* results are not available until 18 to 24 hours after sampling. This makes the determination of the relationship to the health of the beach difficult, since the results reflect the conditions at the time of sampling.

Guidance value: *E. coli* bacteria density should not exceed 235 colony forming units (cfu) per 100 milliliters (mL) of water.

Sampling Protocol

Sampling frequency and locations:

- Test beaches weekly (at a minimum) for E. coli density, preferably at the same time of day and in the same locations.
- Collect water samples at locations where water is about three feet deep.
- Samples should be taken one foot below the water surface.
- Do not mix or combine individual water samples in the same sample container.
- At beaches greater than 300 feet, more than one sample is recommended to obtain a more representative profile. Alternate numbers of sampling sites may be considered based on geographical features of the beach, potential contamination sources and bather usage. For example, if a beach has a known wildlife source (i.e. beaver pond) at one end, that site should be sampled separately from the other area of the beach.

- Samples should be tested by EPA Method 1603 or an equivalent culture- based method.

Sampling after heavy rains:

Additional testing may be warranted after periods of heavy rain when swimming areas are more likely to be flooded by potentially contaminated runoff.

- In the case of a significant rain event (more than ½ inch of rain in a 24 hour period) consider posting an advisory notice to inform beach users that E. coli may be high based on recent rain. If possible, re-sample after a significant rain.
- If re-sampling based on weather conditions is not possible, leave advisory posting up until next routine sample results are received. The advisory notice should be posted for at least 24 hours after a heavy rainfall event or until E. coli sample results are less than 235 cfu per 100 mL.

Cyanobacteria (Blue-green Algae)

Cyanobacteria are naturally-occurring bacteria, commonly called blue-green algae. Under certain environmental conditions, like warm calm weather and high amounts of nutrients, blooms or scums of cyanobacteria can form. Blooms may produce toxins. The appearance of blooms within a swimming area should cause the beach to close for swimming.

Cyanobacteria and Toxin Production

Some types of cyanobacteria will naturally produce compounds in their cells that can be toxic to humans and other animals. Not all cyanobacteria produce toxins. Types that are known to produce toxins may not produce them under all conditions. Assessing the potential risk from a cyanobacterial bloom to humans and animals can be difficult.

Illnesses that May be Caused by Cyanobacterial Toxins

Depending on the type, amount and route of exposures, different types of health effects can be caused by cyanobacterial toxins.

- People may get rashes or other skin irritations from coming into contact with blooms.
- Inhaling water droplets that have toxins in them may cause allergic-like reactions, runny noses, or sore throats.
- Swallowing water that has high levels of cyanobacterial toxins can cause:
    - Sharp, severe stomach problems like diarrhea and vomiting.
    - Liver or kidney damage that may take hours or days to show up in people or animals. Symptoms can include abdominal pain, diarrhea and vomiting.
    - Numb lips, tingling fingers and toes, or dizziness.

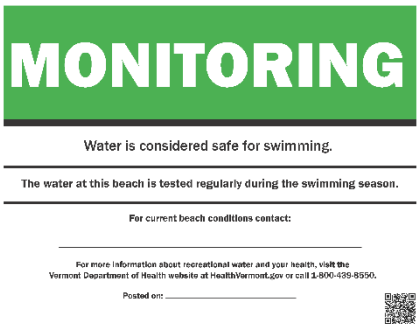
Specific background and guidance about cyanobacteria can be found at HealthVermont.gov/cyanobacteria.

Posting, Notification and Closing Procedures

Posting Beach and Swim Areas

The Health Department has developed a three sign system that can be used to inform the public of current swimming water conditions.

Monitoring



This sign is posted during all normal water quality conditions. It can be customized to provide local contact information.

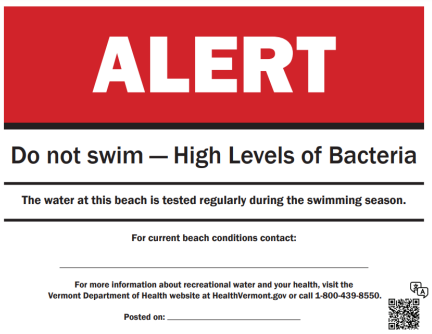
The sign should be removed if a NOTICE or ALERT level sign is posted. This sign can be re-posted once water quality conditions return to normal.

Notice

This sign is posted during or directly after a heavy rainfall event of greater than ½ inch over a 24-hour period.

The sign should remain posted for at least 24 hours after a heavy rainfall event or *E. coli sample* results are less than 235 cfu per 100 mL.

Alert



This sign should be posted when *E. coli* sample results are greater than 235 cfu per 100 mL.

The sign should remain posted until sample results are less than 235 cfu per 100 mL.

Notification of Beach Conditions

Any time that *E. coli* sample results are greater than 235 cfu per 100 mL, or if a beach is closed for other reasons, notify the following:

- Beach Ownership / Management
- Local Town Health Officer: Contact your local town offices or visit: HealthVermont.gov/find-your-tho for town health officer contact information.

Closing Procedures

Beaches and other swimming areas should be closed if the following occur:

- E. coli sample results are greater than 235 cfu per 100 mL
- Known chemical spill or release occurs at or near the swimming area
- Known sewage spill or release occurs at or near the swimming area
- Known physical hazard could endanger the lives or safety of others
- Cyanobacteria (blue–green algae) scum within the swimming area

Re-opening Procedures

Swimming areas can be re-opened when:

- Results of E. coli. Bacteria are below 235 cfu per 100 mL of water
- Chemical spills or physical hazards have been addressed
- Cyanobacteria (blue-green algae) scums have cleared AND toxin testing results are below recommended values or it has been at least 24 hours since the bloom has dissipated.

Swimming, Boating and Water Safety

A fun day at your local swimming/boating area should begin and end with safety as a top priority. Be aware that beaches and other recreation water areas can present risks and dangers from drowning, injury, and waterborne disease. Storm runoff, flooding, and sudden weather can create especially dangerous conditions.

Water Safety

Prevent Drowning

- Always swim with a buddy for safety. Never allow someone to swim alone.

- Never leave young children unattended near the water. Never trust a child to watch another child. Assign an adult to be a Water Watcher. This person is always watching every swimmer to be sure they are safe, and is not distracted with a cell phone, eating or reading a book. Adults can take turns being the "watcher" so the other adults can relax and have fun with the group.
- Drowning is not like in the movies where actors splash about and yell for help. It is swift and silent, so bystanders may not see that a child or adult is in trouble until it is too late. Pay attention.
- Learn to swim and teach children to swim.
- Make sure that members in your group swim in areas appropriate for their swimming ability.
- Always stay within arm's reach of young children.
- Avoid alcohol. Do not drink and swim as it can impact swimming ability and judgement during an emergency.
- Know where the closest phone is located. Many waterways in Vermont have limited or no cell phone reception.
- Have an emergency plan in place; emergency services response may be delayed in many areas. In case of an emergency, dial 9-1-1.

Prevent Illness and Injury

- Swim in designated swimming areas, preferably in areas supervised by lifeguards.
- Practice good hygiene before and after swimming by always washing your hands after using the bathroom and before eating.
- Do not swim if you are sick. Your body may be too tired to exert itself while swimming, and germs in diarrhea can easily spread to others while swimming.
- Pay attention to beach postings for information on water quality.
- Be aware of rapidly changing weather conditions. Check the weather forecast and watch for signs of change such as sudden storm clouds and high winds.
- Be aware of hidden objects under the surface of the water such as rocks, and fallen trees.
- Be aware of drop-offs and hidden underwater obstacles in natural water sites.
- Do not dive into water, always enter water feet-first to reduce the risk of head and neck injuries

Swimming Hole Safety in Vermont

While swimming holes offer wonderful recreational opportunities, these areas come with additional risks. These natural waters can be unpredictable, especially after heavy rain events.

In recent years, multiple drownings have occurred at Huntington Gorge, Cobb Brook, Bolton Potholes, Dog's Head Falls, Saxtons River, Hamilton Falls and New Haven River. Smart decision-making, being informed and paying attention to posted warnings can often prevent a tragedy.

Learn more about how to stay safe at swimming holes.

Water Safety After a Flood

While rivers and lakes can have hazards and contamination under normal conditions, severe storms and flooding can increase the risk of getting hurt, sick, or drowning at these bodies of water. Rainstorms and floods can create risks including abnormally fast-moving currents, underwater hazards such as hidden trees, boulders, sharp objects like metal fragments. Exposure to spilled fuel or chemicals, or large amounts of bacteria or microorganisms from overwhelmed wastewater systems can make you sick.

Stay out of any body of water for at least 48 hours following heavy rains, and longer if it has flooded. After a flooding event, it may take several days before water is safe for swimming and recreation. A good rule of thumb is to wait until the water is clear and calm before going back in the water.

Learn more about the risks and what you should know before going back into the water by referring to the Recreational Water Safety After a Flood Fact Sheet in the Appendix.

Boating Safety

In total, Vermont has more than 800 lakes and ponds, 284 larger than 20 acres. Vermont is also home to over 7,000 miles of rivers and streams. Rivers such as the Winooski, the Batten Kill, the Lamoille, and the West are excellent for kayaking, tubing, fishing, and canoeing.

While enjoying yourself on the water, it's important to keep your safety and the safety of others a top priority. Accidents on the water can happen quickly.

Take all safety precautions:

- Always wear a properly fitted life jacket, also called a personal floatation device (PFD). Learn how to choose the right fit for a life jacket.
- Inspect your boat, canoe or kayak and equipment before every trip.
- Know how to properly use all the safety equipment in the boat.

- Never go out on the water while under the influence of alcohol.
- It's best not to go out alone. If you do, let others know your route.
- Constantly scan for potential hazards and changing weather.
- Know your skill level and avoid conditions that exceed your skills.
- Dress appropriately for changing weather.
- Carry a first aid kit.
- Know the waters. Carry along river guides, maps or depth charts.

For more information on boating safety:

- Motorboat Training & Safety (Vermont Department of Motor Vehicles)
- Boating in Vermont (Vermont Fish & Wildlife Department)
- National Safe Boating Council
- American Canoe Association Safety Tips

Fishing

Fishing is generally not a dangerous activity but, as with any other outdoor recreational activity, there are potential health and safety hazards to be aware of.

Fishing Safely

- Be aware of your surroundings – especially when casting a line – to avoid trees, power lines and other people.
- Any time you are in a boat or wading in deep or fast moving water, make sure you are wearing a personal floatation device (PFD).
- Wear appropriate footwear to protect your feet from stray hooks, rocks, twigs and other hidden objects.
- Always fish with another person, or tell someone else your plans if you go alone.
- Handle all fishing equipment responsibly. Hooks, knives and tools can be dangerous when not properly used.

Eating Fish

Fish provide key nutrients like omega fats, iron, iodine and choline. These nutrients are important for heart health and support health during pregnancy, nursing, and early childhood. Everyone should try to eat 2-3 servings of fish per week.

People who are nursing, pregnant or planning to be, and young children should eat fish with low levels of mercury. Mercury is a toxic metal that is harmful to a developing nervous system. Some large fish have high levels of mercury.

The Vermont Department of Health recommends that some people limit consumption of some fish caught in Vermont. These advisories are based on tests of fish caught in Vermont waters and scientific information about the harmful effects of mercury and, in the case of large lake trout in Lake Champlain and all fish in the Hoosic River, PCBs (polychlorinated biphenyls).

For more information on these safe eating guidelines, visit HealthVermont.gov/Mercury-Fish.

Swimming Pools, Hot Tubs and Splash Pads

Swimming pools provide a great opportunity for exercise and recreational activities. Although swimming pools are generally managed to keep swimmers safe and healthy, it's important to follow basic practices in and around a pool and teach children to do the same.

Swimming Pools

- Shower before you get in the water. Rinsing off in the shower for just one minute removes most of the dirt or anything else on your body that uses up chlorine or bromine needed to kill or inactivate germs.
- Don't pee in the water.
- Practice good hygiene by washing your hands after using the bathroom and before eating.
- Don't swim when you have diarrhea. This is especially important for children in diapers. Swim diapers are not leak-proof.
- Don't swim if you have an open cut or wound (particularly from a surgery or piercing.)
- Wash your child thoroughly (especially their bottom) with soap and water before swimming.
- Take your children on bathroom breaks often.
- Change diapers in a bathroom, not at the poolside.
- Don't swallow the pool water.
- Dry ears thoroughly after swimming.
- Pool toys, like floaties and noodles, are fun, but they are not life saving devices. Inexperienced or non-swimmers should be fitted with a life jacket, and wear it every time they are in or around water.

- It is never too early or too late to learn how to swim. Enroll in swim lessons with an experienced swim instructor.

Swimming pool managers who are looking for guidance on how to properly manage a swimming pool are encouraged to follow the Centers for Disease Control & Prevention's Guidance on:

- Model Aquatic Health Code (MAHC)
- Aquatic Professional's Toolkit
- Responding to Pool Contamination

The State of Vermont does not have statewide regulations concerning the maintenance and testing of public swimming pools outside of licensed lodging facilities.

Hot Tubs

Follow additional guidelines when using hot tubs:

- Don't let children less than 5 years old use hot tubs.
- Don't drink alcohol before or during hot tub use.
- If you are pregnant, talk to a healthcare provider before using a hot tub.
- Keep the number of people in a public hot tub (such as at a hotel or gym) below or at maximum capacity.
- Ask the hot tub operator questions about their cleaning and maintenance practices- including how often the water is replaced, and how often they check the disinfectant residual.
- Remove your swimsuit and shower with soap after getting out of the hot tub to reduce the risk of hot tub rash.

Splash Pads

Special consideration should be taken at splash pads to discourage people from sitting or standing on jets (since that can wash fecal matter into the system) or letting the water go up your nose. The MAHC has information on how operators can ensure water at splashpads is properly filtered, disinfected, and recirculated.

Sun Safety

Skin cancer is the most common type of cancer in the United States, with more than 3.5 million new cases diagnosed and 2.2 million people treated each year. Vermont, despite our

short summers, has the second highest rate of melanoma in the U.S. Melanoma is the most dangerous form of skin cancer.

The vast majority of skin cancers in the U.S. are due to exposure to ultraviolet (UV) radiation from the sun. UV rays can even reach you on cloudy and hazy days, and can reflect off surfaces like water, cement, sand and snow.

Although everyone is at risk, sun protection is especially important for children, as every sunburn increases a child's chance of getting skin cancer in their lifetime. Childhood is also the time when important sun safety behaviors can be established.

Visitors to Vermont's swim and recreational areas often visit during peak sun hours, between 10 a.m. and 4 p.m., which are the most hazardous for UV exposure. Vermont recreational areas can help to protect Vermonters from overexposure to the sun by providing a setting where sun safety behaviors are easy to practice. Research has shown that when recreational areas provide supportive environments and education, sun safety behaviors will change.

How to create a sun safety supportive environment:

- Assess the availability of shade at your site. When there is no natural shade, consider planting trees or providing permanent or portable shade structures where visitors can get out of the sun.
- Include sun safety tips in any materials you present to the public, such as summer program brochures and community newsletters.
- Provide staff with shade umbrellas and wide-brimmed hats for their protection, and encourage them to use sunscreen and wear sunglasses and protective clothing.
- Keep a supply of sunscreen at program sites for staff who may have forgotten theirs.
- Provide sun safety education and materials to your staff, visitors and participants in any swimming lessons.
- Post a checklist at drop-off locations for parents that itemizes recommended items: hat, sunscreen (SPF 30+), t-shirt, lip balm and sunglasses
- If possible, post sun safety signs at your public sites.
- Set a good example. If you and your staff practice sensible sun habits, visitors to your site will too.

General sun safety tips:

- Stay out of the sun as much as you can! Whenever possible, avoid exposure to the sun from 10 a.m. to 4 p.m. Stay in shady areas or under umbrellas to keep your sun

exposure to a minimum and help keep cool. Keep babies under 12 months out of the direct sun.

- Wear protective clothing! Whenever possible, wear, a shirt or other clothing to minimize your sun exposure, and a wide-brimmed hat that shades your face, ears, and neck.
- Use sunscreen that is labeled broad spectrum or at least SPF 30 and can filter both UVA and UVB rays. Pay special attention to your face, nose, ears and shoulders.
- Wear sunglasses that filter UV to protect your eyes and the skin around your eyes.
- Don't use tanning beds, tanning booths, or sunlamps.
- Sun Safety means using all sun safe tips together for maximum protection from the sun's harmful UV rays.

For more information on sun safety:

- Sun Safety Facts (Centers for Disease Control)
- Sun Safety (Environmental Protection Agency)

Appendix

Contents

Recreational Water Sanitary Survey

Name of beach and town:

Date and time of survey:

Type of beach: State Municipal Other (Public) Other (Private)

Surveyor name(s): **Title and organization:**

General Beach Conditions

Air Temperature: °C or °F

Wind: Calm Light Moderate Strong **Direction:**

Hours since last rain event: <24 <48 <72 >72 Amount of rain: inches

Weather Conditions:

Sky Condition: Sunny Mostly Sunny Partly Sunny Mostly Cloudy Cloudy

Wave Intensity:

Comments / Observations:

Water Quality

Water Temperature: °F **Recent change in color?** Yes No

Odor: None Septic Algae Sulfur Other

Clarity / Turbidity: Clear Slightly Turbid Turbid Opaque

Comments / Observations:

Bather Load

Number of people in the water: **Number of people out of water:**

Total number of people at the beach:

List activities seen

Type of activity	Bathing	Watercraft	Playing in sand	Other
Number of people				

Comments / Observations:

Potential Pollution Sources

Sources of Discharge

Type	River	Pond	Wetland	Outfall	Other (specify)
Name of source(s)					
Amount					
Flow rate					
Volume					
Characteristics					

Floatables Present: Yes No

Please circle the following if floatables are found:

Type	Street litter	Food litter	Medical items	Sewage related	Fishing related	Building materials	Household waste
Example	Cigarette filter	Beverage container	Syringes	Condoms, tampons	Fishing line, lures	Pieces of wood, siding	Plastic bags

Amount of Beach Debris/Litter on Beach (percent of beach area):

None Low (1-20%) Moderate (21-50%) High (>50%)

Amount of Algae in Near-shore Water (percent of swim area):

None Low (1-20%) Moderate (21-50%) High (>50%)

Amount of Algae on Beach (percent of beach length):

None Low (1-20%) Moderate (21-50%) High (>50%)

Types of algae found

Type	Periphyton	Globular	Free Floating	Other
Description	Attached to rocks, stringy	Blobs of floating material	No obvious mass	

Color of algae found:

Light green Bright green Dark green Yellow Brown Other

Presence of Wildlife and Domestic Animals

Type	Geese	Gulls	Dogs	Other (Specify)
Number				

List the number and species of bird found dead on the beach:

Number of dead fish found on the beach: Is this more than normal? Yes No

Comments / Observations:

Sanitary Survey Guidance

General Beach Information

Name of Beach and Town: Provide common name of beach and town it is located in

Date and time of Survey: Provide date and time of day sanitary survey was conducted.

Type of beach: Circle the appropriate type of beach.

Surveyor name: Provide name(s) of individuals conducting the sanitary survey.

General Beach Conditions

Air Temperature: Provide air temperature in degrees Celsius or degree Fahrenheit at time when survey was conducted. Temperature reading should be done in the shade. Air temperature, in combination with other conditions can increase the likelihood of higher levels of microorganisms at certain times.

Wind: Select one of the wind descriptions that best match conditions at time sanitary survey was conducted.

Calm: water surface smooth and mirror-like

Light: Small wavelets, crests glassy, no breaking

Moderate: Large wavelets, crests begin to break, scattered whitecaps

Strong: many whitecaps, some spray

Wind Direction: Wind direction is reported as the direction which the wind is coming from.

Hours since last rain event: Bacterial contamination of beaches can result from rain events. Record of rainfall events can be used to predict bacterial contamination of beaches.

Amount of rain: Should be reported in inches using a rain gauge.

Heavy rain events over a short period of time may correlate to increased bacteria levels in water due to runoff.

Weather Conditions: Provide description of current weather conditions.

Sky Condition: Select the closest current sky condition.

Sunny	Mostly Sunny	Partly Cloudy	Mostly Cloudy	Cloudy
No Clouds	10 % clouds	10-50% clouds	50-90% clouds	100% clouds

Wave Intensity:

Calm: Smooth

Normal: 1-2 ft

Rough: >2ft

Water Quality

Water Temperature: Provide water temperature in degrees Celsius or degrees Fahrenheit at time when survey was conducted.

Water temperature is important in assessing the quality of potential habitat for aquatic species and pathogenic organisms.

Recent change in color?: This may indicate recent or ongoing contamination of water.

Odor: Select appropriate description if applicable. An odor given off by a water body can indicate pollution, such as sewage, present at the beach.

Clarity / Turbidity: Turbidity is a measure of the cloudiness of water. Particles that contribute to cloudiness may be inorganic, organic, or biological. Turbidity should be measured with a turbidity meter if available. A visual estimation can be made if not available.

Clear Slightly Turbid Turbid Opaque

Bather Load

Bather Load: Report number of bathers in the water as well as those on the beach. Identify types of activities and number of people involved in activity. Heavy bather loads can potentially cause significant elevation in bacterial counts.

Potential Pollution Sources

Sources of Discharge: Visible sources, including rivers, ponds, and outfall may carry contaminants that affect bathing beach water quality.

Amount, flow, and volume can be reported as high, medium or low.

Floatables Present: Floatable debris in water can become a physical and bacterial hazard in bathing water.

Report the types and amount of floatables observed in the water at time of survey.

Amount of beach debris/litter on beach: Beach debris or litter can pose an immediate health hazard to beachgoers and can be a source of bacterial contamination to the beach.

Amount of Algae in Near-shore Water/ Beach: Algae can be nuisance as well as a health Hazard. Decaying algae often produces a foul smell that may deter recreational activities.

Types of Algae Found: Descriptions of algae can be found on survey form. If Blue Green Algae / Cyanobacteria is suspected, refer to the Cyanobacteria Community Guidance Document.

Presence of Wildlife and Domestic Animals: Waste from these animals can cause bacterial concentrations to rise above recreational water standards.

Record the number and species of animals present.

Recreational Water Sample Data Form

Name of Beach & Date of Sample:

General weather conditions (circle best option)					
Rain in last 24 hours:_ inches					
none	light rain showers	steady showers	heavy rain/ thunderstorms		
Current day (expected conditions)			**Daytime Temperature (average)**		
Sunny	Cloudy	Rainy	less than 60F	80-90F	
			60-70F	90F+	
			70-80F		
Water Clarity (circle one)	Clear	Slightly Turbid	Turbid		

Algae present?
No
Yes If so, color _____

Debris present (check (√) if present)	**on beach**	**in water**
food-related (cans, wrappers)		
medical/sewage-related (condoms, diapers)		
other trash (bags)		

Wildlife present? (If so, which? circle)	
Geese	Dogs
other birds	Other

MONITORING

Water is considered safe for swimming.

The water at this beach is tested regularly during the swimming season.

For current beach conditions contact:

_____

For more information about recreational water and your health, visit the Vermont Department of Health website at HealthVermont.gov or call 1-800-439-8550.

Posted on: _____

NOTICE

Water **MAY NOT** be safe for swimming due to recent heavy rain.

Studies show bacteria may increase to unhealthy levels for a day after heavy rainfall.

The water at this beach is tested regularly during the swimming season.

For current beach conditions contact:

_____

For more information about recreational water and your health, visit the Vermont Department of Health website at HealthVermont.gov or call 1-800-439-8550.

Posted on: _____

ALERT

Do not swim — High Levels of Bacteria

The water at this beach is tested regularly during the swimming season.

For current beach conditions contact:

_____

For more information about recreational water and your health, visit the Vermont Department of Health website at HealthVermont.gov or call 1-800-439-8550.

Posted on: _____

Healthy Recreational Waters

June 2025

Vermont is home to thousands of fresh water lakes, ponds, rivers, and streams. Our waters are a great destination for everything from swimming to fishing to boating and tubing.

Download a printable version of this fact sheet.

What are healthy beaches?

Healthy beaches are both safe and clean. But beaches and other swimming areas do not stay healthy all the time. Many factors can influence the overall health and safety of recreational waters: bacterial contamination, chemical spills, storm water runoff, harmful algae blooms, physical hazards, etc.

How can water become contaminated with bacteria?

One major source of harmful bacterial is fecal contamination, which can come from diapers, feces from people, pets or wildlife, malfunctioning septic systems, storm water runoff and sewage treatment overflows.

How are Vermont beaches monitored and tested?

Vermont State Parks follow the Health Department's Guidelines for Healthy Beaches. Swimming areas are sampled before the start of the swimming season and then at least once a week, depending on the conditions of the water body.

Municipal or non-profit managed public swimming areas should be monitored regularly according to the Health Department's Healthy Recreational Waters Guidelines.

What can I do to help keep Vermont beaches healthy?

- Properly dispose of litter/animal wastes.
- Do not go swimming if you are feeling ill – especially if you have diarrhea.
- Do not feed birds or other wildlife on or near swimming areas.
- Do not dump anything in a storm drain.
- Report any suspected pollution event to beach management.

What can I do to protect my health?

- Follow posted advisories or closings.
- Do not swallow beach water and try not to get it in your mouth.

- Stay out of the water 48 hours following a significant rain event.
- Shower after swimming.
- Wash hands before eating.
- Do not go in the water if you have diarrhea.

What does an advisory or beach closing mean?

This sign is posted during all normal water quality conditions. It reminds bathers that the water is routinely monitored, and provides local contact information for the swimming area.

This sign is posted during or right after a heavy rainfall event of more than ½ inch over a 24-hour period. This sign should remain posted for at least 24 hours after a heavy rainfall event, or *E. coli* sample results are less than 235 cfu (colony forming unit) per 100 mL (milliliters). Local contact information is provided.

This sign is posted when *E. coli* sample results are greater than 235 cfu per 100 mL. This sign should remain posted until sample results are less than 235 cfu per 100 mL. The beach should be closed to swimming when this sign is posted.

For more information:

Vermont State Parks: VTStateParks.com/swimming.html

Vermont Department of Health: HealthVermont.gov/environment/recreational-water

Centers for Disease Control & Prevention: cdc.gov/HealthyWater/swimming

VERMONT DEPARTMENT OF HEALTH

Swimmer's Itch (Cercarial Dermatitis)

June 2025

Download a printable version of this fact sheet.

What is swimmer's itch?

Swimmer's itch (also called cercarial dermatitis) appears as a rash on this skin. It caused by an allergic reaction to certain parasites that infect some birds and mammals. These microscopic parasites are released from infected snails into fresh and salt water (such as lakes, ponds and oceans). The parasite prefers certain birds or mammals (not humans). But if it comes into contact with a swimmer, it burrows into the skin and causes an allergic reaction and rash.

Swimmer's itch is more common during the warmer months and is found around the world.

Swimmer's itch is not the only rash that you may get after swimming in fresh or salt water.

How do the parasites get into water?

The adult parasite lives in the blood of infected animals such as ducks, geese, gulls, swans, and some aquatic mammals such as muskrats and beavers. The parasites produce eggs that are passed in the feces of infected birds or mammals.

If the eggs land in water, they hatch and release small larvae. These larvae swim in search of a certain species of aquatic snail.

If the larvae find one of these snails, they infect the snail, multiply and develop further. Infected snails release a different type of larvae (or cercariae) into the water. This larval form then swims about searching for a suitable host (bird, muskrat) to continue its life cycle. Although humans are not suitable hosts, the larvae burrow into the swimmer's skin, and may cause an allergic reaction and rash.

Because these larvae cannot develop inside a human, they soon die.

What are the signs and symptoms of swimmer's itch?

Within minutes to days after swimming in contaminated water, you may experience tingling, burning, or itching of the skin. Small reddish pimples appear within 12 hours.

Pimples may develop into small blisters. Scratching the areas may result in secondary bacterial infections. Itching may last up to a week or more but will gradually go away.

Swimmer's itch is caused by an allergic reaction to infection, so the more you swim or wade in contaminated water, the more likely you are to develop more serious symptoms. The

greater the number of exposures to contaminated water, the more intense and immediate symptoms of swimmer's itch will be.

Should I see my health care provider for treatment?

Most cases of swimmer's itch do not require medical attention. If you have a rash, you may try the following for relief:

- Use corticosteroid cream
- Apply cool compresses to affected areas
- Bathe in Epson salts or baking soda, or soak in colloidal oatmeal baths
- Apply baking soda paste to the rash (stir water into baking soda until it reaches a paste-like consistency)
- Use an anti-itch lotion, and try not to scratch. Scratching may cause the rash to become infected. If itching is severe, your health care provider may suggest a prescription-strength lotion or cream to lessen your symptoms.

Can swimmer's itch be spread from person to person?

Swimmer's itch is not contagious and cannot be spread from one person to another.

Who is at risk for swimmer's itch?

Anyone who swims or wades in infested water may be at risk. Larvae are more likely to be in shallow water by the shoreline. Children are most often affected because they tend to swim, wade and play in the shallow water, and are less likely to towel dry themselves when leaving the water.

Once water is contaminated, will it always be unsafe?

No. Many factors must be present for swimmer's itch to become a problem in water. Since these factors change (sometimes within a swim season), swimmer's itch will not always be a problem. But there is no way to know how long water may be unsafe. Larvae generally survive for 24 hours once they are released from the snail. However, an infected snail will continue to produce cercariae throughout the remainder of its life. For future snails to become infected, migratory birds or mammals in the area must also be infected so the lifecycle can continue.

Is it safe to swim in my pool?

Yes. As long as your swimming pool is well maintained and chlorinated, there is no risk of swimmer's itch. The specific type of snails must be present in order for swimmer's itch to occur.

What can be done to reduce the risk of swimmer's itch?

- Towel dry or shower immediately after leaving the water.
- Do not swim in areas where swimmer's itch is a known problem, or where signs have been posted warning of unsafe water.
- Do not swim near or wade in marshy areas where snails are commonly found.
- Do not attract birds (by feeding them, for example) to areas where people are swimming.

Encourage health officials to post signs on shorelines where swimmer's itch is a current problem.

For information on swim water testing:

HealthVermont.gov/environment/recreational-water

VERMONT
DEPARTMENT OF HEALTH

Swimming Hole Safety in Vermont

June 2022

While swimming holes offer wonderful recreational opportunities, these areas come with additional risks. Smart decision-making, being informed and paying attention to posted warnings can often prevent a tragedy.

Download a printable version of this fact sheet.

Remember that water is wild

Heavy rains, floating or lodged debris, or even long periods of heat and drought can change currents, depths and the underwater structure of a wild body of water. ALWAYS use caution when swimming in natural water bodies.

Avoid dangerous water holes

In recent years, multiple drownings have occurred at Huntington Gorge, Cobb Brook, Bolton Potholes, Dog's Head Falls, Saxtons River, Hamilton Falls and New Haven River. Be cautious in these areas.

Check water and weather conditions

Swollen rivers and fast-moving currents can create dangerous conditions for days after a heavy rain event. Check the forecast — flash flooding can quickly turn a quiet spot into raging water.

Observe your surroundings

Watch the currents and listen for the sound of unusually loud rushing water. Natural waters can have hidden dangers below the surface, like formations that create a suction. Toss in a stick or short branch. If it is swept away or sucked underwater, stay out and don't take chances.

Never swim alone

Natural waters are unpredictable, and accidents can take only an instant. So always bring a buddy, for good company and to keep each other safe.

Don't swim above or under waterfalls

Heavy currents can wash people over falls, with pressure that may keep you down, and undertows can trap swimmers underwater. Avoid swimming above or directly beneath waterfalls.

Be realistic about your own abilities

Understand your own limits, and don't put yourself or others in danger by taking risks. Water is a stronger force than you may think, so use good judgment, swim sober, and be honest with yourself about your own strength and abilities.

VERMONT
DEPARTMENT OF HEALTH

Recreational Water Safety After a Flood

While rivers and lakes can have hazards and contamination under normal conditions, severe storms and flooding can increase the risk of getting hurt, sick, or drowning at these bodies of water.

Stay out of any body of water for at least 48 hours following heavy rains, and longer if it has flooded.

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Rainstorms and Floods Create Hazards

- Swollen rivers and fast-moving currents can create dangerous conditions at swimming holes and rivers for days after a heavy rain event.
- Severe rains may bring bacteria or microorganisms that can make you sick into the water from overwhelmed wastewater systems and runoff.
- Sharp objects, like glass or metal fragments, and spilled fuel or chemicals can also be carried into swimming areas by stormwater runoff and flooding.

Stay Out to Stay Safe

- **Stay out of rivers and streams until the water is clear and calm** – usually several days after a storm. Watch the currents and listen for the sound of unusually loud rushing water. Natural waters can have hidden dangers below the surface, like formations that create suction.
- **After heavy rains**, stay out of any body of water for at least 48 hours to avoid the risk of getting sick from contaminated water. In a public swim area, you can swim if the water has been tested and it's safe.
- **After a flooding event**, it may take several days before water is safe for swimming and recreation.

What to Know Before You Swim

- Check with the park manager or town to see if the swim areas are open and whether they have tested the water quality.
- Look for and obey any posted signs at beaches and parks.
- Never swim alone. Water is stronger than you think, and accidents can take only an instant.
- Watch for cyanobacteria in the water, since extra nutrients from the floodwater may cause blooms. They can make the water appear dark green, and look like pea soup or spilled paint.
- Don't swallow beach water or swim with open wounds that can get infected.
- Shower after swimming, and wash your hands before eating.