

2004 Season
Maine's Healthy Coastal Beaches Risk Assessment Matrix

Guidelines for Beach Closures (3/04)

This worksheet is designed to help communities assess potential human health risks associated with water pollution at coastal swim beaches. Much of the information needed to answer the following questions may have already been documented in shoreline surveys, beach-user surveys, and municipal surveys and through water quality data. Contact the Healthy Coastal Beaches Monitoring Program Advisory Board members to locate these documents(see end of the document for contacts). Keep in mind that conditions will change over time and it will be necessary to revise this document regularly.

*The final score is assigned a grade and there are associated recommendations that accompany that grade. These grades are meant as a **guideline** to help communities assess the safety of their beaches for recreational water users. In order for these guidelines to be effectively used as a component of a risk-assessment system, they must be used in conjunction with a regular water quality monitoring program. These two tools, regular water quality monitoring and this risk-assessment matrix, are intended to guide communities in determining when, or if, to close their beaches should pollution pose a threat to recreational water users. This completed matrix will assist you in decision making and problem solving for your beach.*

Below are some examples of possible scenarios that you could experience with respect to using the risk assessment matrix and water quality monitoring and recommended procedures:

On a given day in the summer during the height of beach usage:

Water sample for enterococci is 104 or higher (indicating high potential health risk based on that single sample) and Risk Assessment Matrix score is an A rating (low potential health risk)

Cautious approach: close area and retest until acceptable water tests are attained

Less-cautious approach: keep area open and retest water

Water sample for enterococci is 103 and Risk Assessment Matrix score is a D rating (high potential health risk)

Cautious approach: close area and retest until acceptable water tests are attained

Less-cautious approach: keep area open and retest water

Water sample for enterococci on one end of the beach is 5 but on the other end of the beach it is 290 and the Risk Assessment Matrix score is a D rating (high potential health risk)

Cautious approach: close area and retest until acceptable water tests are attained

Less-cautious approach: keep area open and retest water

Directions: Complete this Assessment Matrix for each section of the beach defined by your sample points (where you take water quality monitoring samples). You may choose to define the beach area based on density of use. Defining the specific area will allow you to make management decisions for a region of the beach, rather than treating the whole beach as one area. Work through the questions to a final score. For any questions to which you do not know the answer; the data is not available; or does not exist, **place an asterisk (*) in the blank**. These will be used to determine the degree of variability in the final score. There may be cases in which the evaluators of a beach choose to assign a given risk a score higher than that suggested in this matrix due to proximity, upkeep, true level of usage and other factors. Evaluators may also choose to score a given risk factor lower than suggested for the same reasons. These reasons should be documented in the final comments section at the end of this form.

Beach Name _____
Beach Section (define outermost boundaries) _____
Town _____
Date _____
Evaluators Names _____

- I. Score 1 point for each of the following that impact the beach as follows:**
1. adjacent (and/or downstream) to the beach property
 2. adjacent to a stream that empties onto the beach area within ¼ mile of the beach boundary vvv`
 3. otherwise impact the beach due to proximity or location
- (one point for each location)**

1. Stream flows, not related to rain event (may flow intermittently, still not rain related) _____
2. Stream flows only in relation to rain _____
3. Inactive straight pipe _____
4. Land drain _____
5. Animal Farm or Kennel _____
6. Roof gutter Drain _____
7. Sink/laundry, basement, drain (gray water) _____
8. Boats with cabins moored within a 2 mile radius of the swimming area _____
9. Stormwater runoff _____
10. In Ground Septic Systems _____
11. Add 5 points if bacteria is listed as a pollutant in the 303d list for any water body emptying into your beach area. _____

(Find the 303d list at the Maine Department of Environmental Protection site)

<http://www.state.me.us/dep/blwq/docmonitoring/impairedwaters/index.htm>

Section I. Total Points

II. Score 15 points for each of the following that impact (see impact guidance in I.) the beach property (15 points for each location):

1. Active Straight pipe _____ (Note: this is a DEP violation)
2. Malfunctioning septic system _____ (Note: Dept of Health Engineering has a list of volunteer certified inspectors)
3. Septic systems that have not been checked for over 3 years _____
4. An overboard discharge unit impacting the swimming area _____
5. Marina/Moorings _____
6. Combined Sewer Outfall _____
7. Outhouse within 300' _____
8. Stormwater pipe _____

Section II. Total Points

III. Score Beach Conditions

1. Approximate number of people that visit the beach during the summer season.

< 50,000 = 1 point 50,000-150,000 = 5 points > 150,000 = 10 points _____

2. Approximate number of people that visit any one-mile stretch of the beach during the day of maximum use.

< 50,000 = 1 point 50,000-150,000 = 5 points > 150,000 = 10 points _____

3. Are there public restrooms at the beach within 400'?

Yes = 0 points No = 15 points _____

4. Are dogs allowed on the beach? Yes = 5 points No = 0 points _____

5. Are large numbers of wild animals regularly present on/near the beach (flocks of birds)?

Yes = 2 points No = 0 points _____

6. Impervious surface scoring (Based on areas that impact the beach based on location/proximity):

a) 5 points for each parking lot within 100 feet of the beach boundary _____

b) 1 point for every building/house roof within 200 feet of the beach boundary _____

c) 5 points if there is a road the length of the beach within 500 feet _____

Section III. Total Points

IV. Beach History:

1. Was this beach closed/or 'no swim advisory' posted during the previous bathing season due to bacterial contamination? Yes = 10 points No = 0 points _____

2. How long was the beach closed during the previous bathing season due to bacteria?
1-5 days = 5 pts 6-10 days = 8 pts 11-15 days = 15 pts >16 days = 20pts _____

Enter 0 if there were no closures

3. Has storm sampling (sampling during times of unusually high rainfall) resulted in enterococci scores of greater than ____ in more than one location or on more than one occasion?
Yes = 10 points No = 0 points _____

4. Was this beach closed/or 'no swim advisory' posted during the bathing season two years ago?
Yes = 5 points No = 0 points _____

5. Was this beach closed/or 'no swim advisory' posted during the bathing season three years ago?
Yes = 5 points No = 0 points _____

6. Any confirmed illnesses reported in the past 4 years?
Yes = 5 points No = 0 points _____

Section IV. Total Points

V. Subtract points for the following items:

- 1. Subtract 5 points if there is a marine vessel pump-out station within a 3 mile radius _____
- 3. Subtract 10 points (or the number entered in Section III, question 6a.) if all properties within the area that drain to the beach are tied to a municipal sewer system _____
- 4. Subtract 10 points if all properties with the area that drain to the beach are tied to a municipal storm water system _____
- 3. Subtract 10 points if the beach has at least a 200 foot deep buffer area of plants along the ENTIRE length of the beach (except for narrow access points) _____
- 4. Subtract 5 points if beach management has posted educational signs about pollution resulting from soiled diapers, dog feces, gull-feeding and/or advertising public restroom locations _____
- 5. Subtract 3 points if doggie waste bags and waste receptacles are provided at multiple entry points for dog owners _____

VI. **Sub-Total Total (all sections) Points** _____

VII. **Number of Asterisks (*) in the completed form** _____ **(this is your degree of variability (+/-). (See Directions on the first page) Enter this score below with the grand total score.**

VIII. **Grand Total Score** _____ +/-

GRADING SYSTEM:

A – score < 20 points

Suggested Action: Continue to maintain these healthy conditions. On-going monitoring is required to ensure safe use of recreational water.

B – 21 – 35 points

Suggested Action: It may be appropriate to post warning to swimmers that rain storms increase pollution and likelihood of unhealthy swimming conditions. On-going monitoring is required to ensure safe use of recreational water. Education should be provided to beach-users to promote healthy practices at the beach.

C – 36 – 50 points

Suggested Action: It may be appropriate to post warning to swimmers that rain storms increases pollution and likelihood of unhealthy swimming conditions. It may be necessary to monitor more often than once a week to ensure that risk factors are not having periodic effects on the recreational water. Pollution sources need to be identified and removed. Education needs to be provided to beach-users to promote healthy practices at the beach.

D – 51- 69 points

Suggested Action: Post warning to swimmers that rain storms increases pollution and likelihood of unhealthy swimming conditions. Monitor more often than once a week to ensure that risk factors are not having periodic effects on the recreational water. Pollution sources need to be identified and removed. Education needs to be provided to the community and beach-users to promote healthy practices at the beach and to promote life-styles that decrease nonpoint source pollution.

F – > 70 points

Suggested Action: Close beach until water sampling demonstrates healthy swimming conditions. Pollution sources need to be identified and removed. Education needs to be provided to the community and beach-users to promote healthy practices at the beach and to promote life-styles that decrease nonpoint source pollution.

FINAL COMMENTS AND PLANNED ACTIONS:

Healthy Coastal Beaches Monitoring Program Contact Information:

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For more information about the Healthy Beaches (Fresh Water) contact:

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