

# STANDARD OPERATING PROCEDURE FOR RISK-BASED BEACH EVALUATIONS



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**STANDARD OPERATING PROCEDURE  
FOR RISK-BASED BEACH EVALUATIONS**

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**N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES  
BEACH PROGRAM**

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## 1.0 Scope and Application

- 1.1. The Beach Program uses a risk-based ranking system to evaluate and classify designated coastal beaches. The system was developed to rank the sampling priority at each beach, as either Tier 1, Tier 2 or Tier 3. Each ranking determines sampling frequency at each public beach.
- 1.2. This Standard Operating Procedure (SOP) provides the Beach Program staff with guidance for completing risk-based beach evaluations.

## 2.0 Equipment and Supplies

- 2.1. The following supplies are necessary for evaluation of data:
  1. Pencil/pen
  2. Definitions (section 6)
  3. Beach Classification Checklist (Appendix)
  4. DES water quality data and reports (provided by Coastal Program, Shellfish Program, Beach Program, Clean Vessel Act Program, NPDES, and 305(b) and 303(d) reports).
  5. Data from the University of New Hampshire (UNH) and the National Oceanic and Atmospheric Administration (NOAA).
  6. Recreational water surveys for Towns, Beach Managers and Medical Facilities.

## 3.0 Data Collection-Preparation

1. Obtain a copy (electronic or printed) of the Classification Checklist for each beach to be evaluated.
2. Obtain copies of data and reports specific to each criterion and beach.

## 4.0 Data Collection-Method

- 4.1. Complete the Risk-Based Beach Evaluation form as follows. For each criterion in each of the three sections (Beach History, Beach Use and Microbial Pathogen Sources), place the value of the criteria next to the appropriate level of significance. The points will be awarded as follows:
  1. Not an Issue                      0 points
  2. No Data/Low Priority        2 points
  3. High Priority                    3 points (or 4 points if indicated on form)
- 4.2. Category Explanation:
  1. Microbial Pathogen Sources
    - a. Access the Shellfish Program Sanitary Survey reports, NPDES, and NOAA information to determine each criterion's significance.
  2. Beach Use
    - a. Access Beach Program files and beach survey results to determine each criterion's significance.
  3. Beach History
    - a. Access historical Beach Inspection data to determine each criterion's significance. Access information from other DES Programs, UNH, NOAA, or from municipal records if information cannot be found in the inspection data.
- 4.3. Additional beach considerations are determined as follows:
  1. The criterion "beach importance to the local economy" will be determined by surveying beach managers.

2. The criterion "beach importance to public" will be initially ranked according to historical beach inspection data and beach use knowledge. Public comments and opinions will serve to adjust criterion.
- 4.4. Based on beach derived specific information, determine if significant risk factors exist that should receive greater consideration. If so, explain and rank the consideration on a scale of one to three. One being the least significant and three the greatest.
- 4.5. Tally initial classification by summing the number for each level of significance and place the total points in the final row.
- 4.6. Determine the initial classification based on the following scoring criteria.
  - a. The Initial Tier 3 classification range is less than 38 points.
  - b. The Initial Tier 2 classification range is 38 to 52 points.
  - c. The Initial Tier 1 classification range is greater than 52 points.
- 4.7. Determine the final classification based on listing in the CALM or State Park status. If this beach was listed as "impaired" or "not supporting for primary contact recreation" in the most recent version of the Consolidated Assessment and Listing Methodology (CALM) or is a state park, increase the tier status as follows.
  - a. Tier 3 beaches are elevated to Tier 2 status
  - b. Tier 2 beaches are elevated to Tier 1 status

## 5.0 Data and Records Management

- 5.1. Upon completion of evaluations, the Program Coordinator will generate a sampling schedule based on the number of beaches ranked as Tier 1, Tier 2 or Tier 3. The schedule will follow the Beach Program Tiered Monitoring Plan.
- 5.2. The Beach Program Coordinator will compile the risk-based beach evaluation forms, data, and reports in beach specific folders at DES headquarters.
- 5.3. The Beach Program Coordinator will store evaluation results electronically in beach specific spreadsheets.

## 6.0 Definitions

**Actual threat or source:** an existing structure or conduit that contributes or transports contaminants to a beach area, thus causing negative health impacts to humans.

**Potential threat or source:** an existing structure or conduit that may contribute or transport contaminants to a beach area but sufficient data has not been collected to assess impacts on water quality.

**CSO:** Combined Sewer Overflow

**TMDL:** Total Maximum Daily Load

**WWTF:** Waste Water Treatment Facility

**Tier 3 Beach:** A beach area where there are minimal to no public health risks to those recreating at the beach.

**Tier 2 Beach:** A beach area where potential public health risks exist to those recreating at the beach.

**Tier 1 Beach:** A beach area where actual public health risks exist.

**Impaired:** A beach listed as "impaired" in the most recent 305(b)/303(d) Consolidated Assessment and Listing Methodology (CALM) submitted to EPA.

**State Park:** A beach managed by NH Department of Economic and Resource Development.

## APPENDIX: Beach Tier Evaluation Form

Criterion	Significance Category		
	Not an issue 0 points	Low Priority/No data 2 points	High Priority 3 points (or as noted)
<b>Microbial Pathogen Sources</b>			
Average annual precipitation	< 25 inches	Data not available	≥ 25 inches
Number of significant (> 3 inches) rainfall events in the past year	No events	1-2 events OR Data not available	3 or more events <b>(4 points)</b>
Data available from monitoring rainfall vs. bacteria counts	No risk	Low detected risks or data not available	Moderate or high detected risks
Source of fecal contamination within 1 mile of beach-other than WWTF or septic fields	None	1 or more potential sources or data not available	1 or more actual sources <b>(4 points)</b>
Point sources: industrial waste within 1 mile of beach	None	1 or more potential sources or data not available	1 or more actual sources <b>(4 points)</b>
Number of CSOs within 5 miles of beach	None	≤ 2 or Data not available	> 2
Proximity of WWTF discharge to beach	None	≥ 5 miles or data not available	< 5 miles
Estimated number of septic systems within 1 miles of beach	None	< 25 or data not available	≥ 25
Do town ordinances allow domestic animals on this beach during bathing season?	No	Data not available	Yes
Marina with boat pumpout facilities within 1 mile of beach	No marina	Marina with pumpout facility or data not available	Marina without pumpout facility
Presence of boat mooring sites within 1 mile of beach	None	< 10 moorings present or data not available	≥ 10 moorings present <b>(4 points)</b>
Proximity to waterbody that requires a TMDL study for bacteria in the watershed of beach	None	> 2 miles or data not available	≤ 2 miles <b>(4 points)</b>

<b>Beach Use</b>				
Mean number of days in bathing season	<50		Data not available	≥ 50
Mean number of people in water during each inspection	<5		Between 5 and 15 OR Data not available	≥ 15 <b>(4 points)</b>
Mean number of bathers during peak recreation days (weekends/ holidays)	<50		Data not available	≥ 50 <b>(4 points)</b>
<b>Beach History</b>				
Reported health issues	No issues reported		1-2 issues or data not available	≥3
Historical exceedance of bacteria standards in previous 5 years	No exceedances		1-5 exceedances or data not available	> 5 exceedances <b>(4 Points)</b>
Mean time for public notification	< 24 hours		Data not available	≥ 24 hours
Mean number of days beach affected by advisory during bathing season	<2 days		2-3 days	> 3 days
Mean high water swim season temperature	<15.6°F		Data not available	≥ 15.6°F
Dogs, birds and wildlife present on beach during each inspection	Present at < 25% of inspections		Data not available	Present at ≥ 25% of inspections
<b>Additional Criterion</b>				
Beach importance to the local economy	Not important to economy		Moderately important to economy or not assessed	Highly important to economy
Beach importance to public	Beach not considered a popular area for tourists or residents		Moderately popular or not assessed	Beach is considered a highly popular area for tourists or residents
Based on beach derived specific information, determine if significant risk factors exist that should receive greater consideration. If so, explain and rank the consideration on a scale of one to three. One being the least significant and three the greatest.		<b>Initial Classification Points Total</b>		
<b>Initial Tier Evaluation (circle)</b>	<b>&lt; or =37 points: Tier 3</b>	<b>38-52 Points: Tier 2</b>		<b>&gt; or = 53points: Tier 1</b>
<b>Final Tier Evaluation Instructions</b>		<b>Final Tier</b>		
If this beach was listed as "impaired" or "not supporting for primary contact recreation" in the most recent version of the Consolidated Assessment and Listing Methodology (CALM) <b>OR</b> is a state park, increase Tier 3 beaches to Tier 2 or Tier 2 beaches to Tier 1.		<b>Tier</b> _____		