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Maine Healthy Beaches Program Excerpts from Data Analysis, 2006-2015

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Excerpts from MHB Data Analysis (2006-2015)

2017 Regional Beach Manager's Meeting

High Risk Beaches

Each beach varies in its system dynamics, pollution sources, sensitivity to local rain events, and how long it takes contamination events to flush out of the system. Assessment of exceedance rates over the past 10 years indicates that the top 10% (6 beaches) have had >18% of samples exceed the 104-safety limit. Collectively, these **six** beaches accounted for nearly **30%** of the total exceedances, and three (Laite, Cape Neddick, and Goochs) are impacted by point sources of fecal pollution (Figure 1).

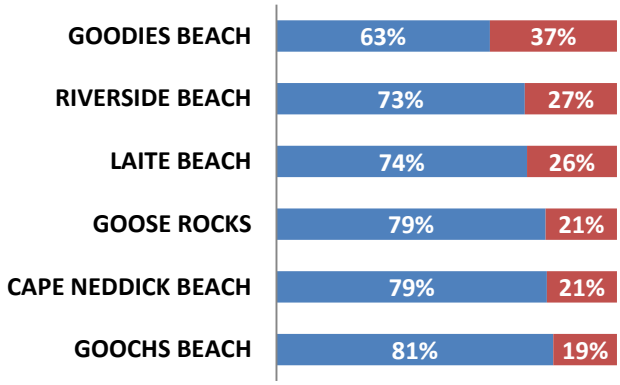

Figure 1. Beaches with the greatest exceedance rates (% samples ≥ 104) program-wide (2006-2015). Blue bars indicate the % of routine samples that were acceptable and red bars the % of samples that exceeded 104 MPN.

Based on the percentage of historical samples between the 70 and 104 thresholds, **the greatest resampling burdens would occur** at the top 10% (6 beaches), which would all see a >7% increase in exceedance rate associated with 70 MPN (Figure 2). These beaches are also considered "high-risk" due to the impact of freshwater inputs and the potential for human-sourced fecal contamination.

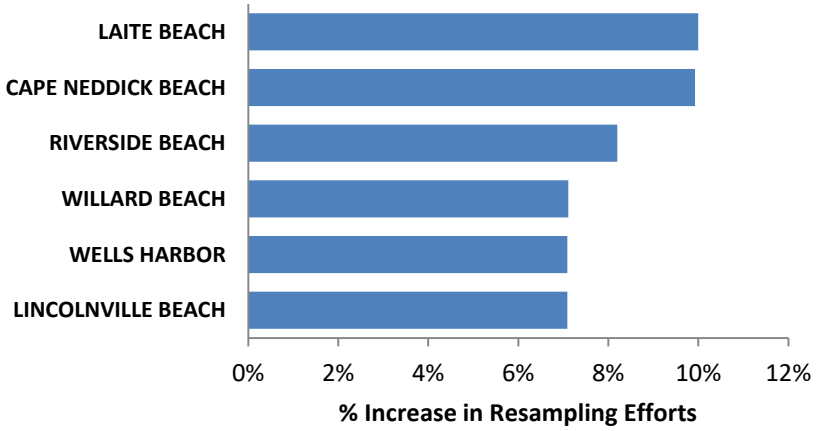

Figure 2. The beaches with the greatest number of historical data points between 70 and 104 MPN during 2006-2015.

Two of these beaches (Lincolnville and Laite) as well as Goodies, Colony, East End, and Short Sands also represent those with the lowest resample cleanliness rate[1] program-wide (less than 75%), comprising over **32%** of all historical initial resamples (Figure 3).

[1] A percentage indicating how often initial resamples following an exceedance are clean.

How often resamples are clean can indicate the nature and extent of a contamination event, and/or how quickly the event flushes out of the system (typically one day for most beaches).[2] MHB has supported ongoing efforts to address pollution sources at these beaches.

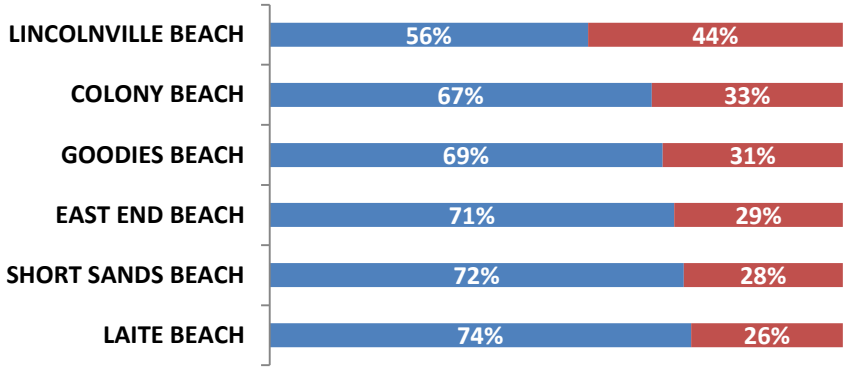

Figure 3. Beaches with the lowest resample cleanliness rate (less than 75%) program-wide. Blue bars indicate the percentage of clean resamples and red bars the percentage of resamples that exceed the safety limit (104 MPN).

Low Risk Beaches

Overall, the majority of Maine's coastal beaches are clean with only temporary increases in bacteria levels as retest results are acceptable most of the time. **Half** of Maine's monitored coastal beaches (30) had a **<7%** exceedance rate and 27% of beaches had an exceecdance rate of <**5%** (Figure 4). The majority of beaches with low exceedance rates also had a resample cleanliness rate of 100% and are primarily impacted by non-point source pollution (e.g. runoff, wildlife).

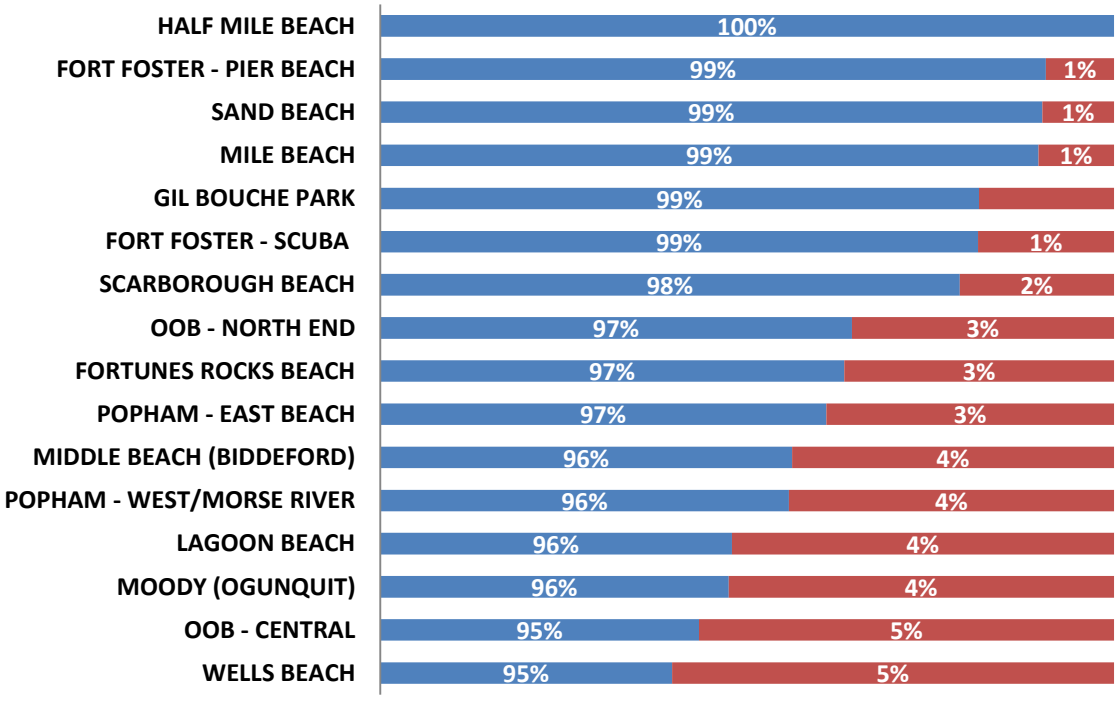

Figure 4. Beaches with <5% exceedance rates (% samples ≥ 104) program-wide (2006-2015). Blue bars indicate the % of routine samples that were acceptable and red bars the % of samples that exceeded 104 MPN.

[2] Includes only those beaches with at least 10 resamples. Calculations use current EPA 104 MPN/100ml threshold.