

Introduction

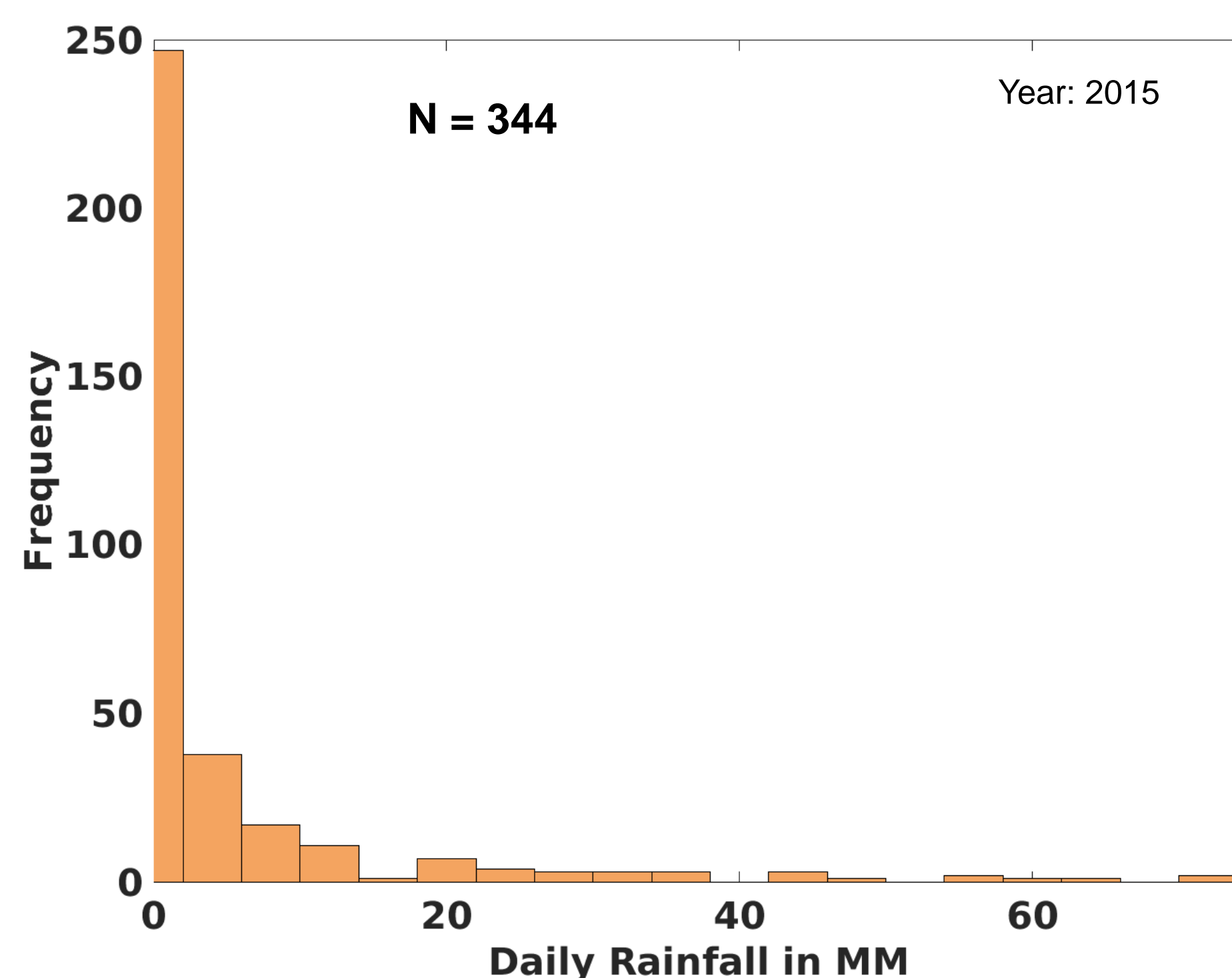
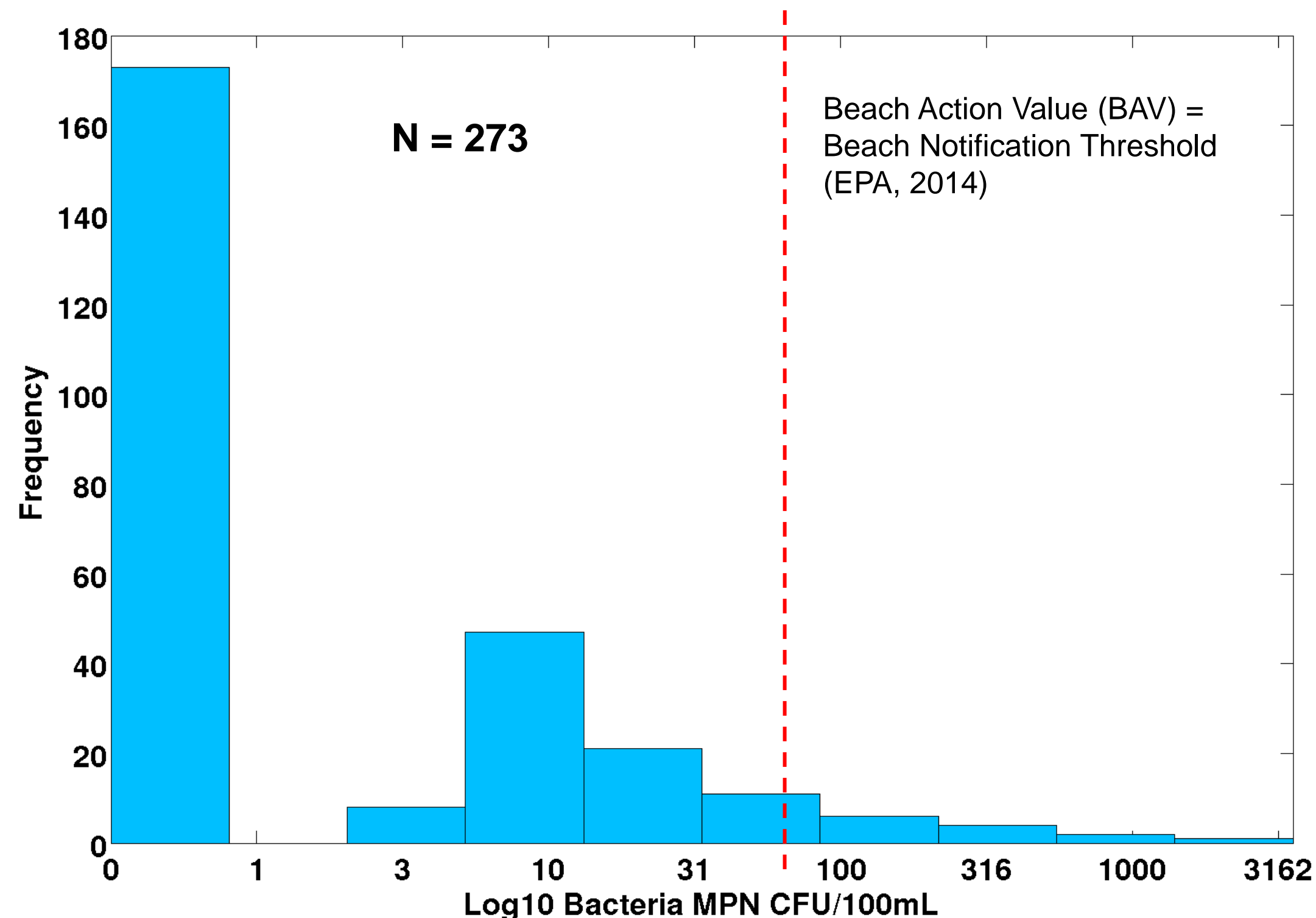
This work describes the analyses of ~4 years of beach water quality data at Rincón Public Beach. Given that rainfall has been found to be the strongest indicator of Fecal Indicator Bacteria (FIB) in beach water (see Vargas and Rodríguez and Tamar et al. posters), this effort includes an assessment of precipitation information from a nearby Weather Underground station.

FIB data from SURFRIDER FOUNDATION and CARICOOS: www.surfrider.org/blue-water-task-force/chapter/4 (March 21, 2012 - April 18, 2016)

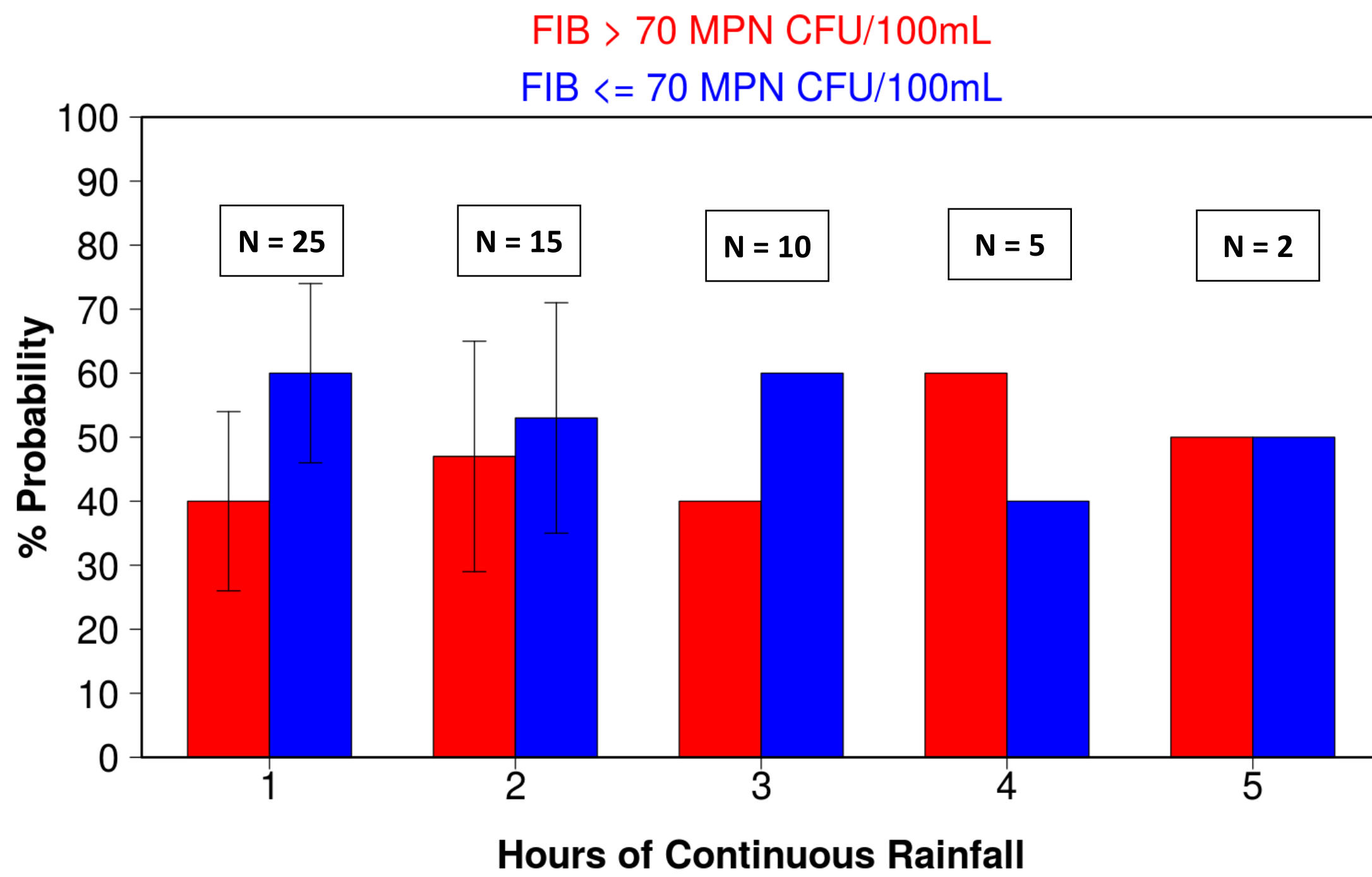
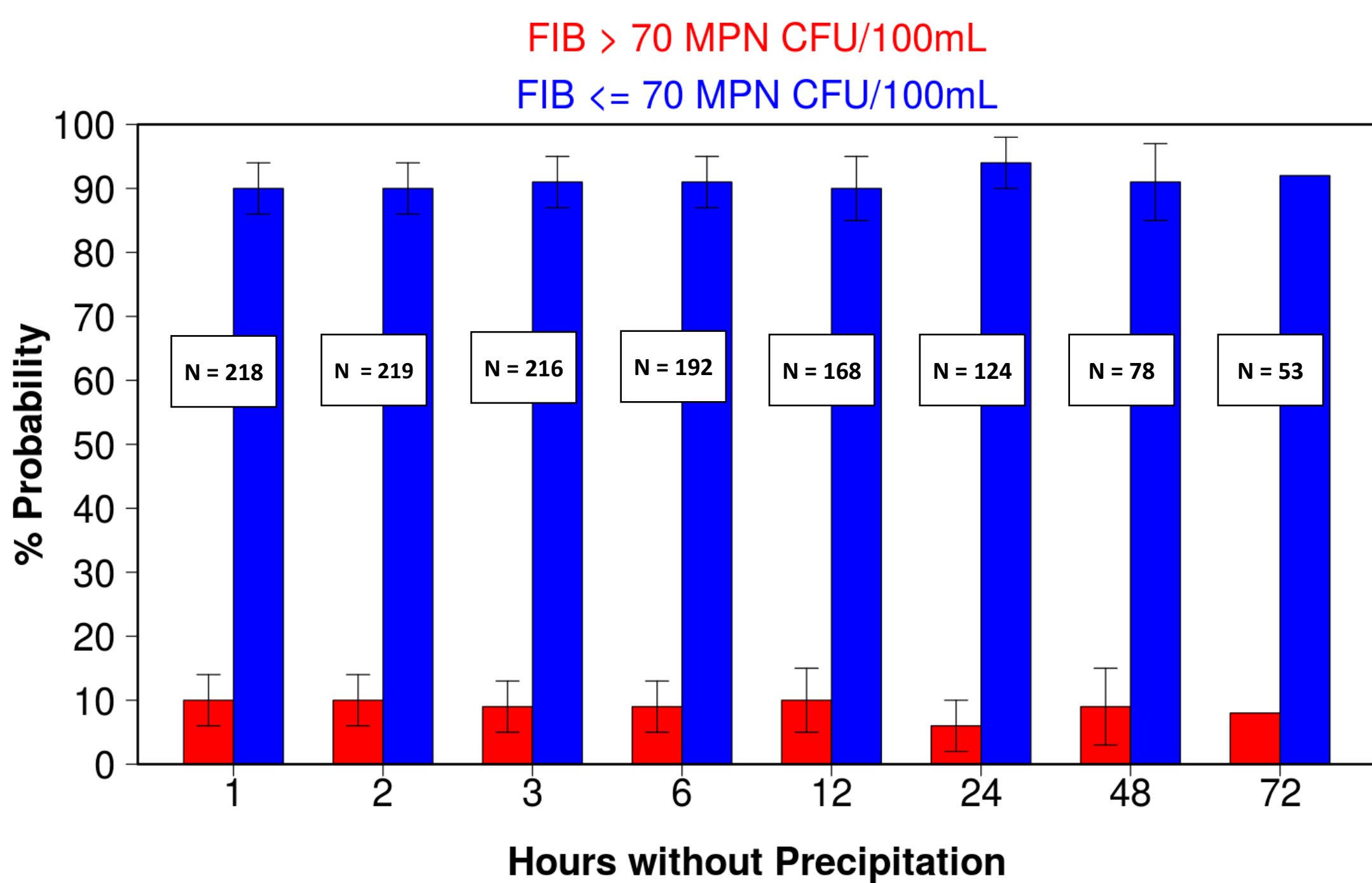
Precipitation from Weather Underground Station KPRRINCO3: <https://www.wunderground.com/personal-weather-station/dashboard?ID=KPRRINCO3>



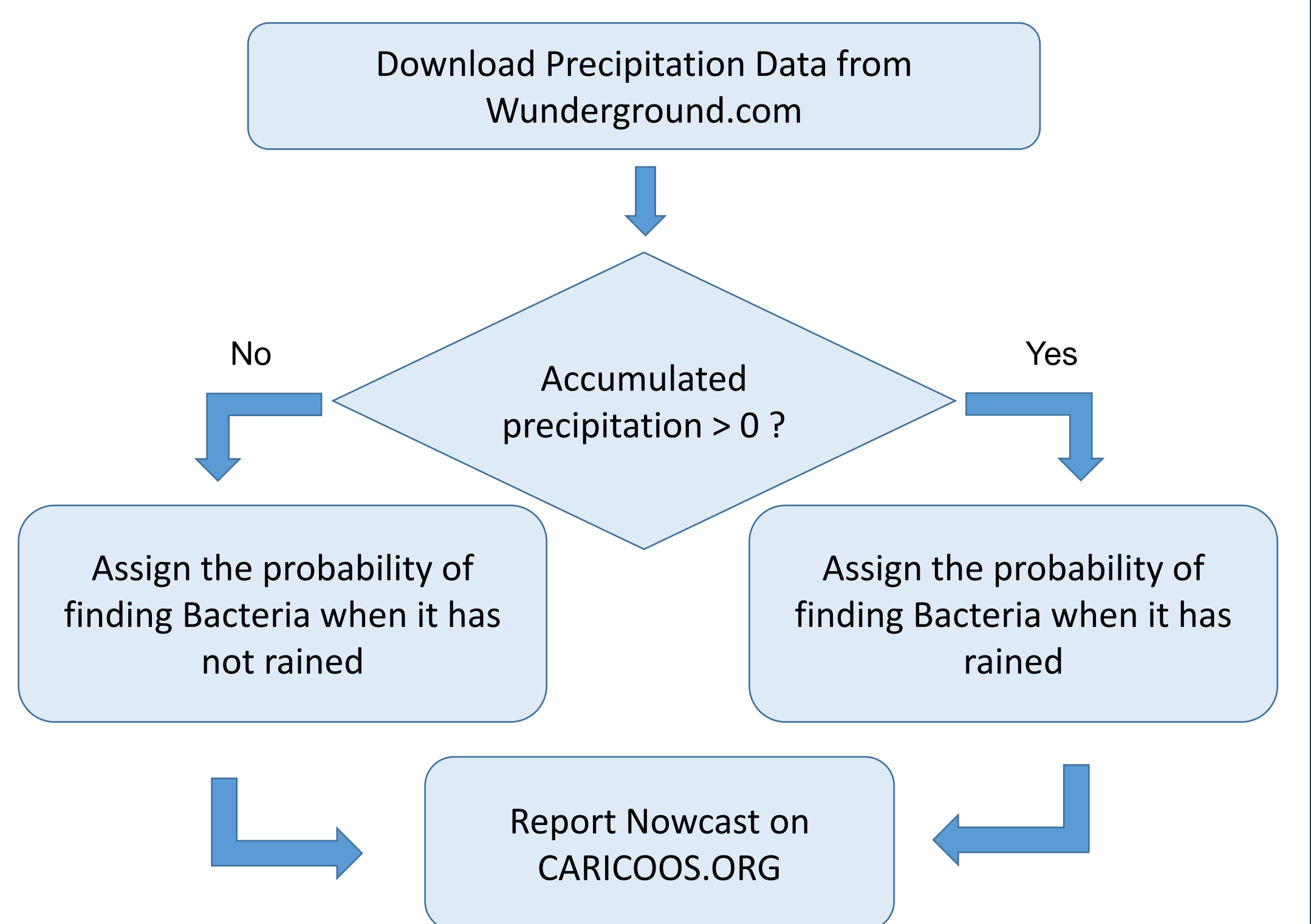
Distribution of FIB and Precipitation



Relationship between FIB exceedance and Precipitation: Towards a binary model



Proposed scheme for operational nowcast



EXAMPLE OF DATA AVAILABILITY		Did it rain during the last hour?	
		Yes	No
Was BAV exceeded?	Yes	N = 10	N = 21
	No	N = 15	N = 197

Summary and Future (Ongoing) Work

Given that rainfall is a good predictor of FIB in Rincón Public Beach, a probabilistic analysis of FIB following rainfall events was performed. The analysis shows strong statistics (errors of 4%) for cases of no rainfall, indicating confidence on the binary model for this case. However, due to the small number of available data sets after rainfall events, and subsequent errors of roughly 14%, more sampling is needed in order to develop the binary model for this case.

References and Acknowledgements

- Montgomery y Runger (2003). Probabilidad y Estadística aplicada a la Ingeniería. 2da Ed., Editorial Limusa Wiley.
- Predictive Tools for Beach Notification Volume I: Review and Technical Protocol. United States Environmental Protection Agency, EPA, Office of Water, Office of Science and Technology. EPA-823-R-10-003. November 22, 2010.
- National Beach Guidance and Required Performance Criteria for Grants, 2014 Edition. United States Environmental Protection Agency, EPA, Office of Water. EPA-823-B-14-001. July 31, 2014.