# Maine Statewide Total Maximum Daily Load (TMDL) for Nonpoint Source (NPS) Pollution

*December 2015*

## Executive Summary

This *Maine Statewide Total Maximum Daily Load (TMDL) for Nonpoint Source (NPS) Pollution* report has been developed to address water quality impairments in 30 rural/suburban streams in Maine that are affected by nonpoint source (NPS) runoff. This report is issued to satisfy Section 303(d) of the Federal Clean Water Act and of 40 CFR § 130.7 that require states to establish the total maximum daily load of pollutants for those impaired waters. These waterbodies were listed as impaired in *Maine's 2012 Integrated Water Quality Monitoring and Assessment Report* and have been assessed as not meeting the criteria in Maine's water quality standards (WQS) for aquatic life protection. The TMDL is an assessment of the maximum loading that a waterbody can receive without exceeding its WQS. NPS pollution, which includes stormwater runoff, cannot readily be traced back to a specific source within a watershed. One of the major constituents of NPS pollution is sediment, which contains nutrients that stimulate algal growth. Excessive algal growth depresses dissolved oxygen (DO) and sedimentation impacts stream habitat suitability for aquatic life.

This TMDL evaluates NPS pollution using a regionally calibrated land-use model that calculates pollutant loads for nutrients (nitrogen and phosphorus) and sediment. Maine's WQS do not contain numeric criteria for nutrients and sediment, therefore a comparative attainment approach was used to establish pollution reduction targets for impaired waters. This approach requires identical modeling procedures be applied to both impaired watersheds and corresponding watersheds that attain WQS. Pollutant load reductions are then calculated based on the difference between impaired and attainment watersheds. The pollutant reductions needed to attain WQS vary greatly with watershed condition and the ranges are: sediment from 0% to 78%, nitrogen from 0% to 70% and phosphorus from 0% to 94%. Watersheds that needed no reductions in pollutants were dominated by forested lands and the observed impairments are likely due to natural conditions, such as the presence of wetlands. The overall median reduction values were 24% for sediment, 26% for nitrogen and 24% for phosphorus.

Each watershed in this TMDL underwent a field assessment that included documenting conditions within the stream and on the surrounding terrain that may contribute to the observed impairment. These assessments included measuring instream habitat, sampling water quality and documenting areas of significant runoff (hot spots) in the watershed. A detailed description of these assessments and the modelling results are presented for each watershed in a separate appendix. The information in each appendix is designed to support communities and stakeholders in developing a Watershed Management Plan (WMP) that will describe the steps needed to achieve pollution reduction targets and to attain WQS.