



SECTION ONE

Population, Land Use, and Watershed Impacts



Maine Office of GIS

Introduction

Many environmental stressors affecting the Bay and its watershed stem from gradual changes in population and land use. Even slowly growing populations require new housing, schools and other infrastructure. Under current development patterns, providing for those needs stresses aquatic ecosystems, forests, and rural landscapes. Expansion of road networks, for example, can decrease commuting times and improve commerce, but it also increases impervious surfaces, generates stormwater that can degrade streams, and creates new corridors for suburban sprawl. Without thoughtful planning, deterioration of water quality and fragmentation of rural landscapes can result.

The Casco Bay watershed is among the most densely developed in Maine. Although the watershed area represents only three percent of the state's total land mass, it holds nearly 20 percent of its population. As in many coastal areas around the United States, planners project that the region's population will continue to grow in the coming decades. The subsequent development will generate additional paved surfaces, roof tops, compacted soils, and other impervious surfaces. As urbanization pushes outward into formerly rural areas, it transforms and fragments the landscape, leading to habitat loss and water quality degradation.

It is difficult to measure how urbanization of the watershed affects Casco Bay, since many of the impacts from development occur as a result of nonpoint sources of pollution transported by stormwater. Although our population is distributed in varying densities across the region, the watershed acts like a funnel, channeling water and pollution and directing it downstream into rivers, streams, lakes, and bays that become the repository for stormwater and its contents. In some places in the watershed, the impact of stormwater is magnified because stormwater and sewage are mixed in combined sewers, and rainfall can cause untreated human waste to be discharged to rivers or the Bay.

Assessing how much the region has grown has limited value without also understanding how the region has grown. Where we grow, and how we grow, will have long lasting effects on the health of Casco Bay. Thus the four indicators in this section – population, impervious surface cover, stormwater and CSOs – provide a proxy of our current understanding of the impact that urbanization and stormwater are having on the health of Casco Bay. Together, the four are “drivers” behind many of the ecosystem indicators discussed in later sections.