

The Environmental Impacts of Urbanization and Land Use Change in Delaware

Michael A. Doody

Synopsis

This unit, designed for Advanced Placement Environmental Science and to be taught in conjunction with another curriculum unit entitled “The Engineering of Green Infrastructure and Stormwater Management Practices” available at teachers.yale.edu, helps students connect the issue of stormwater runoff and urban flooding to land use and impervious surfaces. In this unit, students learn about how land is used in the US and in Delaware, along with the causes and effects of urbanization and land development. The unit concludes with students examining the differences in land development in Delaware’s three counties between the year 2000 and 2019. Using their knowledge of urbanization, students predict the driving factors encouraging this development and the environmental impacts it is and will have on local ecosystems. This unit addresses several science practices outlined by College Board, including explaining environmental concepts, processes, and models presented in written and visual format and proposing and justifying solutions to environmental problems. Students use these practices to satisfy AP Environmental Science Learning Objectives EIN-2.M (describe the effects of urbanization on the environment) and STB-1.B (describe methods for mitigating problems related to urban runoff).