

# Skating Rinks, Salt Marshes, and Splash Pads, Oh My! Assessing Climate Vulnerability for Massachusetts Department of Conservation and Recreation

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**Background/Objectives.** Massachusetts Department of Conservation and Recreation (MA DCR) is challenged by the large number of its properties and facilities susceptible to anticipated climate change impacts. Its properties span the entirety of Massachusetts, from the coastline to the Berkshires, and consist of natural, cultural, and recreational resources that are vital to the Commonwealth. Through the development of a vulnerability assessment, the goals were to:

- Advance and document DCR's understanding of its climate vulnerabilities.
- Evaluate the anticipated near and long-term vulnerability of DCR properties to different climate hazards.
- Consider the sensitivity and adaptive capacity of properties based on their natural resources and infrastructure assets
- Integrate resilience considerations into asset management, disaster recovery, and capital planning decisions.

The vulnerability assessment, automated using GIS, accounts for the wide variety of factors and assets on DCR properties and the value public parks and natural resources provide to vulnerable populations.

**Approach/Activities.** This assessment served to identify the vulnerability of DCR properties to myriad climate hazards, including sea level rise, extreme precipitation, and extreme heat. Three factors (exposure, sensitivity and adaptive capacity) contributed to a data-based automated vulnerability GIS tool for 528 DCR properties. Each property received a vulnerability score, which will be used to make planning decisions and help DCR better understand their specific vulnerabilities over time. The assessment is a first pass at prioritizing where to focus site-specific efforts based on best available information and a reasoned approach.

**Results/Lessons Learned.** The finished product included an online map viewer for DCR staff that displays their 528 properties, their exposure and vulnerability scores, and serves as a location for staff to access the latest and greatest climate data that were used in the assessment. The team also developed a Survey123 form that allows DCR staff to log climate-hazard related damage and service requests. This field data can be also used to track a property's real-life vulnerability to climate-hazards over time. This assessment was based on asset data but provides a lesson on how to include the most important asset: people.