

Impacts of Hurricane Sandy and White-tailed Deer (*Odocoileus virginianus*) on Maritime Vegetation Recovery at Fire Island National Seashore  
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Three trail cameras were deployed from April through November in overwashed areas of the Otis Pike High Dune Wilderness Area on Fire Island to monitor deer activity (Figure 1). Three vegetation surveys were also conducted in each overwash to assess cover composition.

The OW9 camera captured the highest number of both deer and human photos. In 2015, the mark-recapture analysis estimated a total of 21 deer used OW9 and 34 deer used OW4; OW2 had no identifiable deer. In 2016, the mark-recapture analysis estimated a total of 14 deer used OW9, 14 deer used OW4, and 23 deer used OW2. Twenty-one vegetation species were observed each year in a total of 216 plots, but species composition changed slightly. In both years, a vegetation cover gradient was observed, increasing from the primary dune inland to the marsh.

The number of deer photos exhibited a gradient from farthest to nearest to Watch Hill; deer may be attracted to human-dominated areas of Fire Island due to (1) additional escape cover present from built structures, and (2) increased feeding opportunities from garbage or visitor feeding. The apparent gradient in overwash use by both deer and humans may be correlated or coincidental. A future analysis aims to answer this research question using results from the vegetation surveys and ecological modeling.

The mark-recapture analysis suggested that fewer deer used OW9 and OW4 in 2015 than in 2016. In both years, the camera in OW4 captured each identifiable deer only one time. The camera in OW9 captured the same identifiable deer multiple times, suggesting that deer using OW9 either (1) move much more frequently than those using OW4, or (2) have smaller home ranges and overlap space use more frequently than those using OW4. The same number of deer may use each of these overwashes, but frequency of use is higher for OW9, likely due to its proximity to Watch Hill.

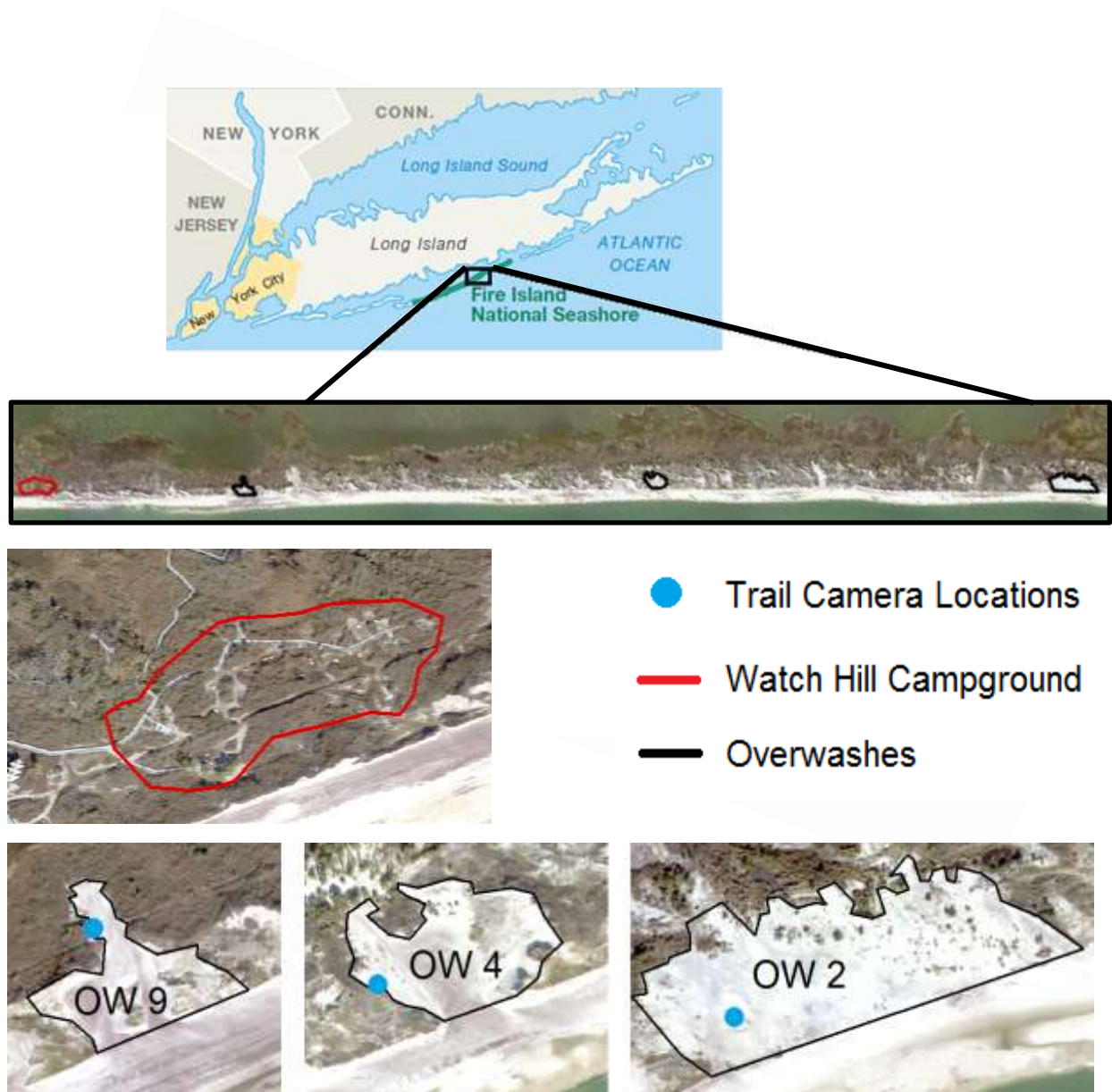


Figure 1. Locator map of Fire Island National Seashore, including the Watch Hill Campground area and three overwashes with trail camera placements.