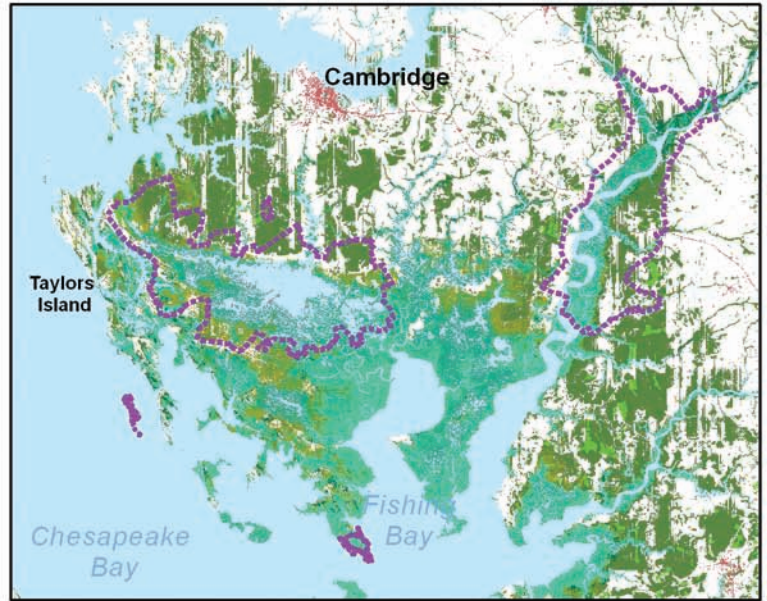
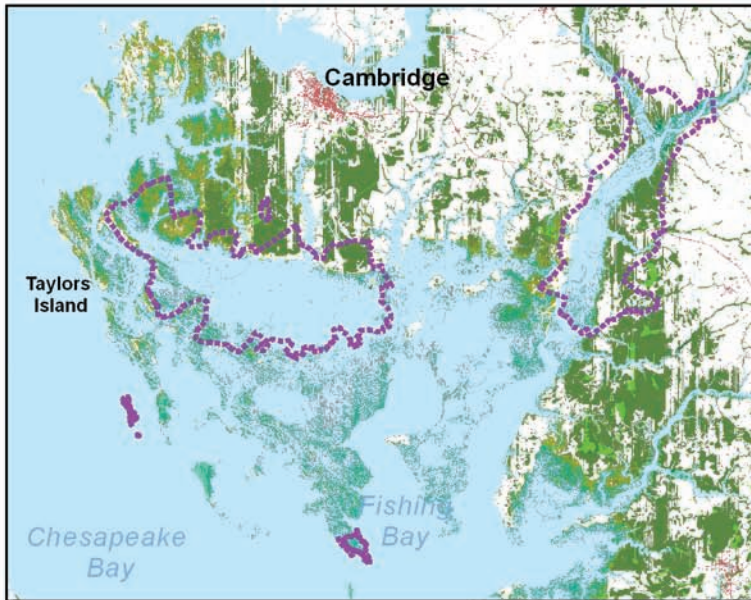


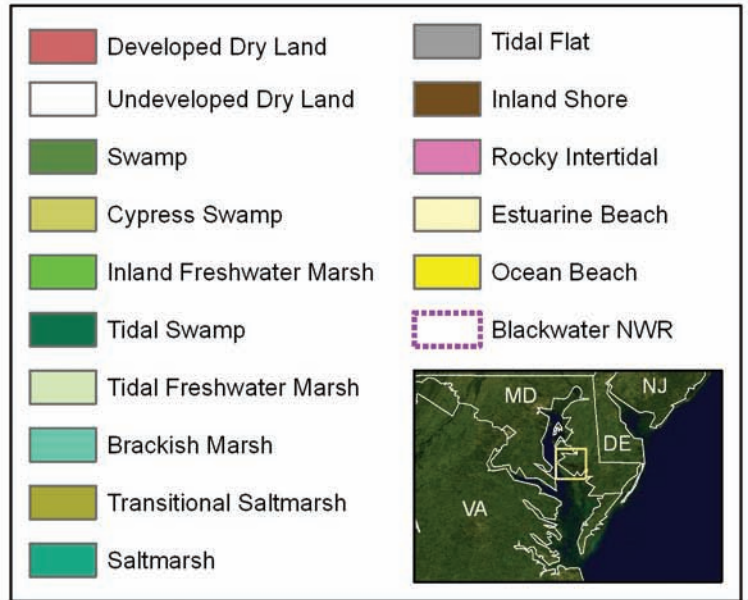
Initial Condition



Year 2050 (11.2 inches)



Year 2100 (27.2 inches)



## Blackwater National Wildlife Refuge

Blackwater National Wildlife Refuge is a crown jewel among Chesapeake Bay's treasured places. Unfortunately, it could be largely underwater by 2100. Dramatic habitat losses are predicted for the refuge and surrounding areas, where global sea-level rise is compounded by high rates of land subsidence due to groundwater withdrawal for agriculture and relatively lower rates of natural accretion in marshes. The site is predicted to lose over 90 percent of its tidal fresh marsh, tidal swamp, and brackish marsh, which are converted to saltmarsh and, ultimately, open water. The loss of brackish marsh could be particularly harmful to species that have adapted to these habitats, including rockfish and white perch, as well as anadromous

species such as herring and shad, which use brackish marsh habitat as they transition between their freshwater and saltwater life cycles. Similarly, the loss of tidal fresh marshes could affect minnows, carp, sunfish, crappie, and bass, which depend on these habitats for shelter, food, and spawning.