

A comparison of wetland boundaries established by two delineation methods: Utilizing field-based techniques to delineate Rene Henderson Preserve in west Castine, Maine

Wetlands are economically and biologically valuable, because they provide habitats, control flooding, sequester carbon, and moderate pollutants. The United States Fish and Wildlife Service created the National Wetlands Inventory (NWI) to maintain a record and record changes made to wetlands in the United States. Remotely-sensed wetland imagery was used to create NWI's database, and is currently used to identify and delineate wetlands for professional applications. Despite being cost and time-effective, remote-sensing technology does not allow for an accurate depiction of wetland characteristics, especially in forested wetlands. The Army Corps of Engineers (ACOE) developed an alternative field-based guide for wetland delineation. The purpose of this study was to utilize the ACOE method and delineate a portion of Rene Henderson Preserve in Castine, Maine and to create a new wetland boundary using ArcMap. This new boundary was compared to one of the previously established boundaries by the NWI, and the area of the polygon encompassing the wetland was determined both before and after the boundary was altered using our methods. The area of the Castine wetland using field-based delineation techniques was found to be smaller than the area determined with remote-sensing techniques. This difference could be caused by several factors, including seasonal changes of wetland topography, outdated satellite aerial imagery, and the size of the wetland.

Advisor: Sarah O'Malley