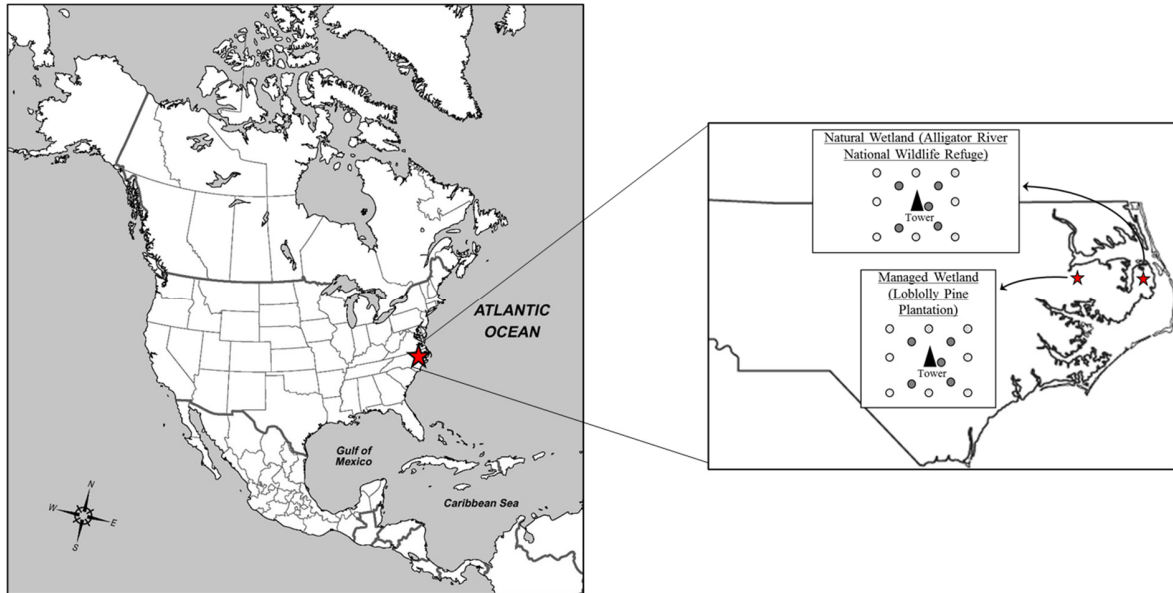


**Supplemental Figure S1:** Location of field sites in eastern North Carolina, USA. The natural wetland is located in the Alligator River National Wildlife Refuge, Dare County, NC, while the drained wetland (drained for loblolly pine production silviculture) is located in Washington County, NC. Both sites are equipped with an eddy flux tower, with 13 vegetation plots surrounding the tower. Of those thirteen plots, five were utilized for this study (gray shaded circles) (adapted from [9]).



**Supplemental Figure S2:** Images depicting A) the natural wetland at Alligator River National Wildlife Refuge and hummock-hollow microtopography (adapted from [6]); and B) mature loblolly pine plantation in the drained wetland where trees are planted on bedded rows (high microtopographical location) with inter-tree row space (low microtopographical location) (photo credit: Kevan Minick).



**Supplemental Figure S3.** Soil horizon profile for A) the natural wetland; and B) the drained wetland. Letters indicate organic and mineral horizons based on the US soil taxonomical classification system and numbers in parenthesis show the average depth in cm of each horizon.

