

# Land cover change shows little effect on migration patterns of Wood Storks and Great Egrets

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Wood storks (*Mycteria americana*) have been endangered in North Carolina, South Carolina, Georgia, and Florida since 1984. In 2014, the USGS changed the status of the wood stork from endangered to threatened in these areas. As an indicator species, they are one of the first species to react to changes in the environment. Evaluating the extent to which land-cover change effects wood storks, principally with respect to their movement, is of paramount importance. Conversely, great egrets (*Ardea alba*) rely on similar environments and are a more resilient species, less responsive to changes in their habitat than wood storks. We employ concepts from circuit theory to conduct a least-cost path analysis of the migration patterns of both species through the eastern United States. Least-cost path analysis applies differential weights to land-cover types corresponding to the expected relative ease of traversing each type, such that the resulting trajectory estimates the path of least cost through the landscape. We compared least-cost paths with GPS tracking data obtained from an online repository (Movebank.org). Estimated least-cost paths in 2001, 2006, and 2011 do not reveal substantive evidence to suggest that land-cover change is one of the motivating factors of variation in migratory dynamics in wading-nesters.