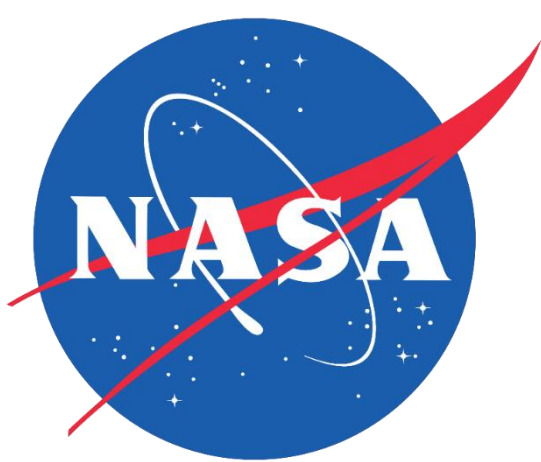




Applying NASA Earth Observations to Monitor Marsh Migration in Maryland's Coastal Croplands



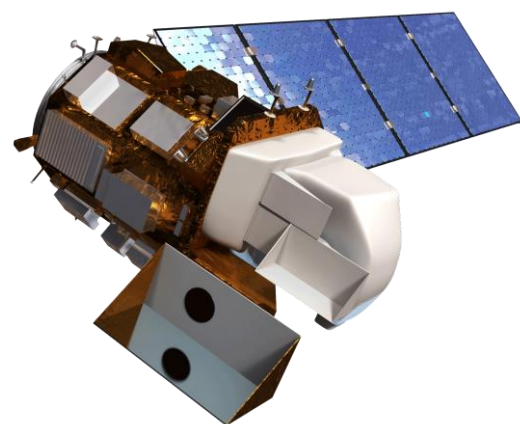
Time marshes on: How will agriculture around the bay look in 20 years?

Climate change has induced global sea level rise around the world, including the Chesapeake Bay Region, which is affecting the Bay's agricultural lands. The Bay's critical coastal croplands are threatened due to saltwater intrusion (SWI), leading to a variety of community concerns. Local farmers now face decreasing crop yields and unfavorable soil conditions that disrupt their established livelihoods. The impacts of SWI lead to a decrease in the ecosystem services known to be offered by Chesapeake Bay's agricultural lands, such as nature reserves, food, fiber, and essential habitat for local wildlife populations.

NASA DEVELOP is using satellite data to observe the land cover changes that have occurred as a result of Saltwater Intrusion.

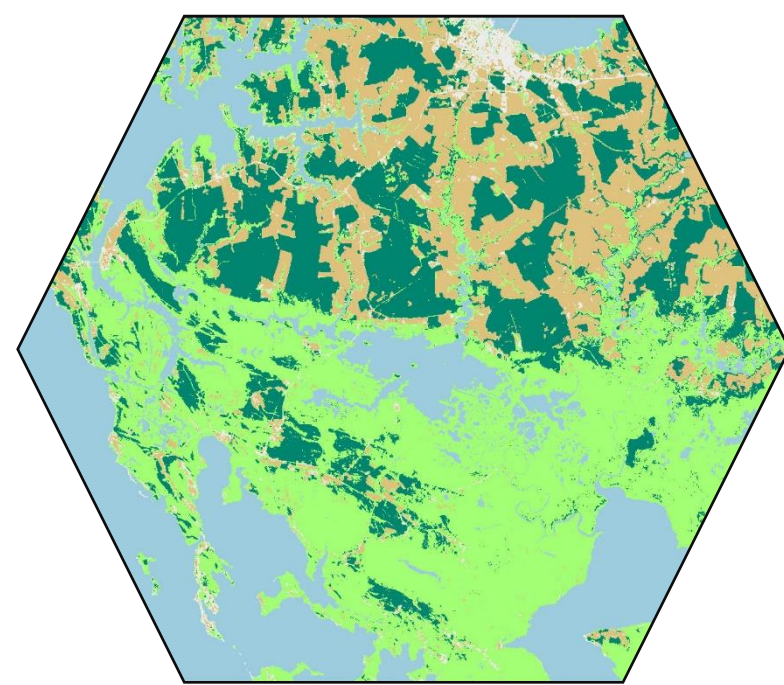


Landsat 5 TM

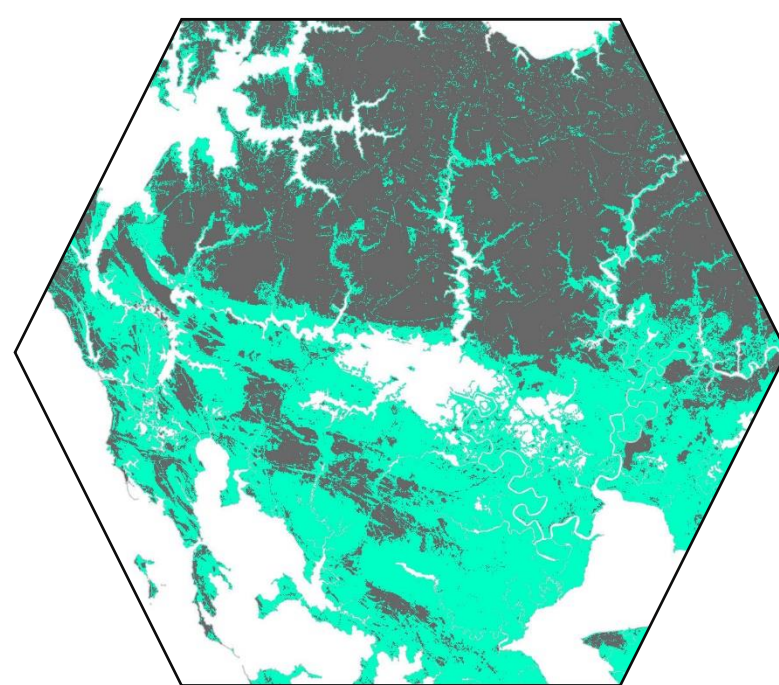


Landsat 8 OLI

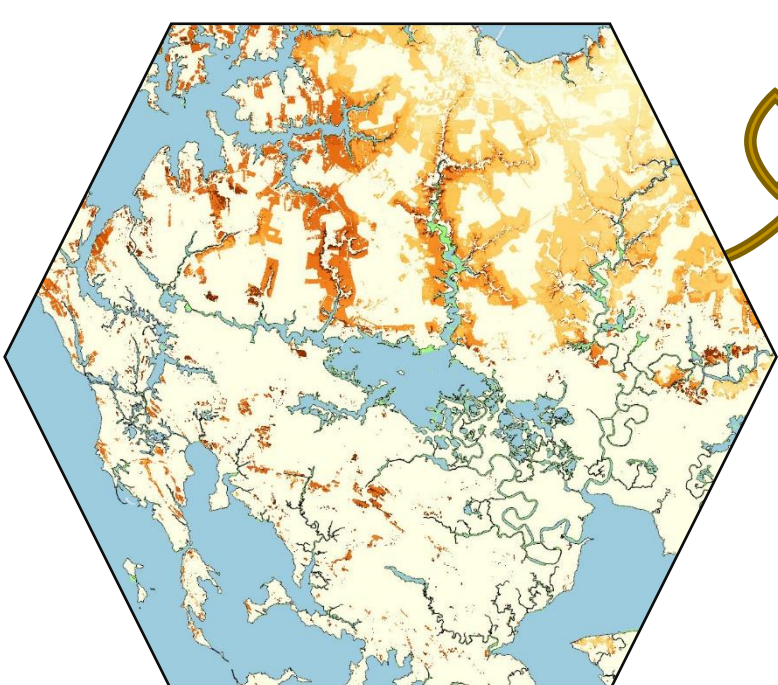
Land Use Land Cover (LULC) Change Maps



Marsh Migration Maps



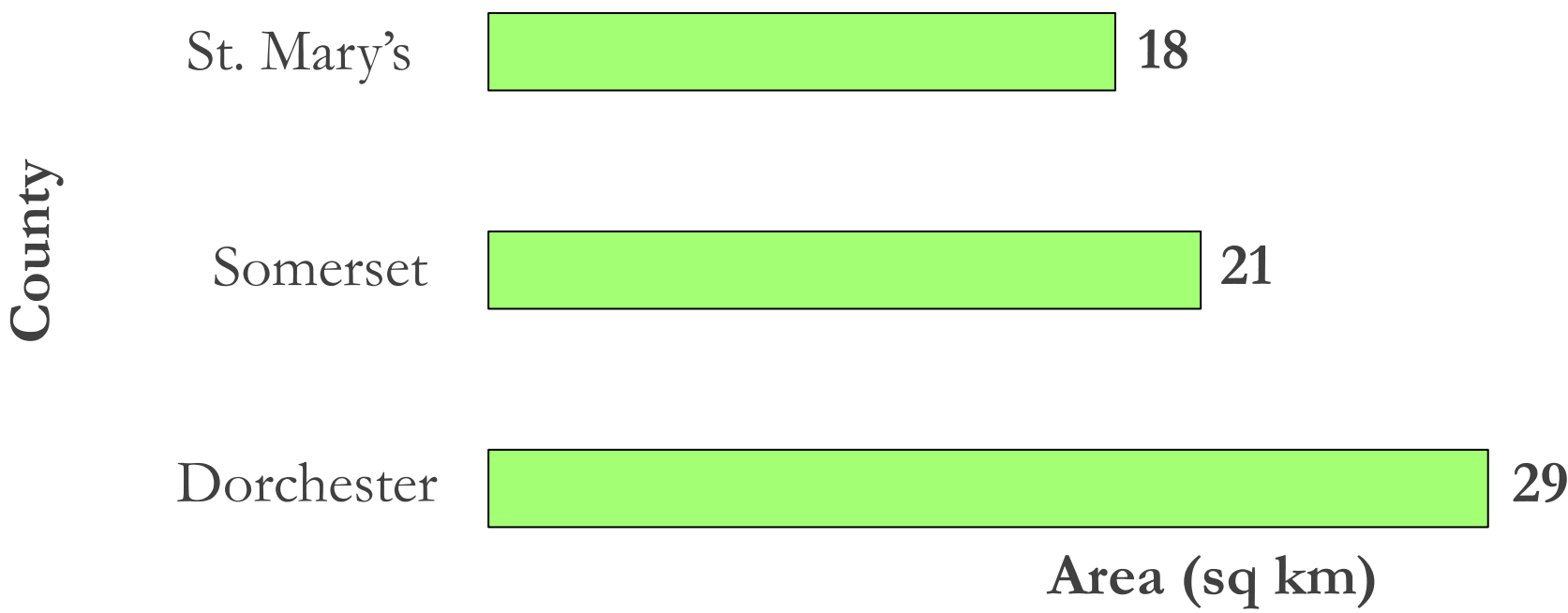
Forecasted Changes from Agriculture to Wetlands



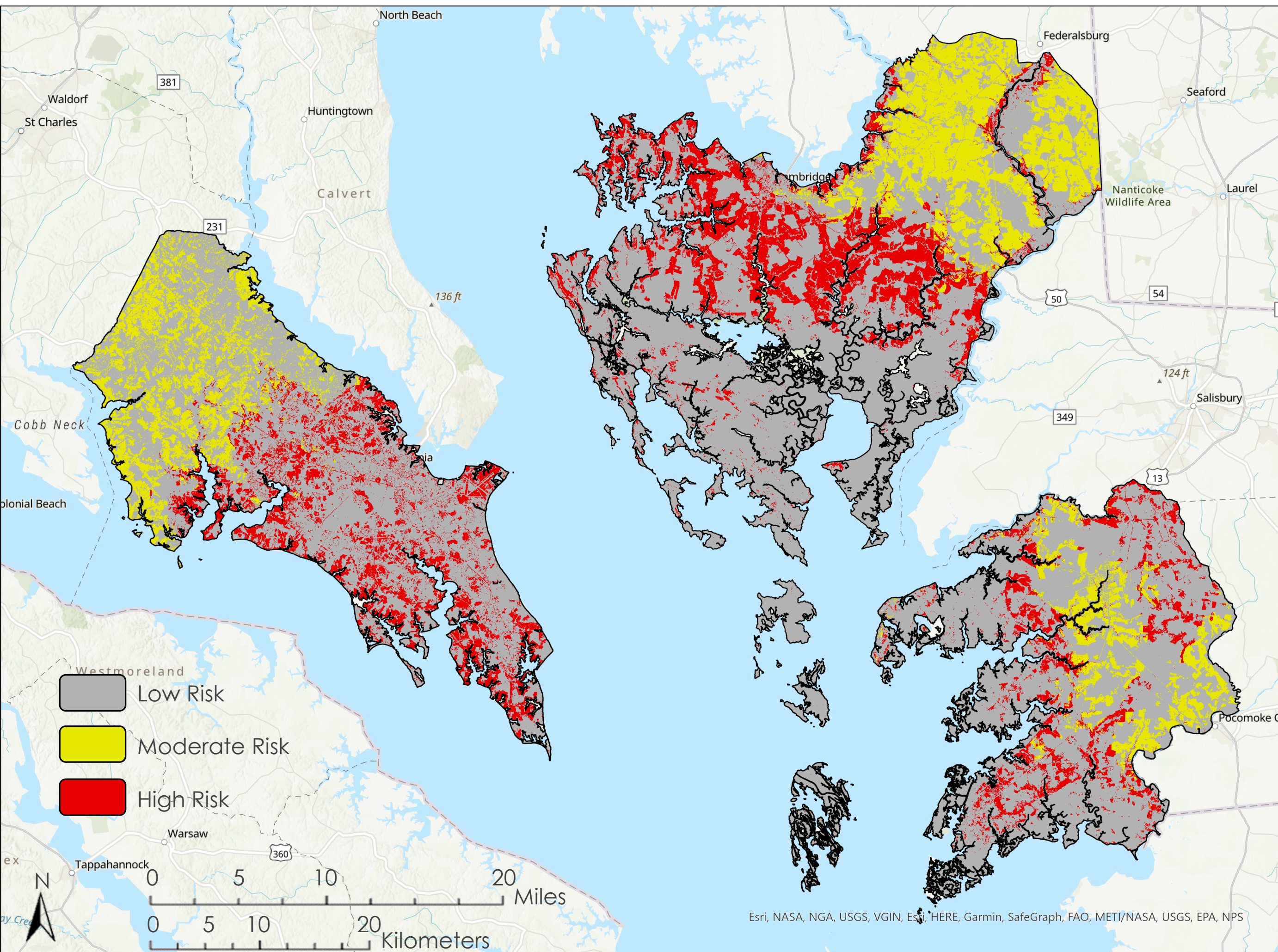
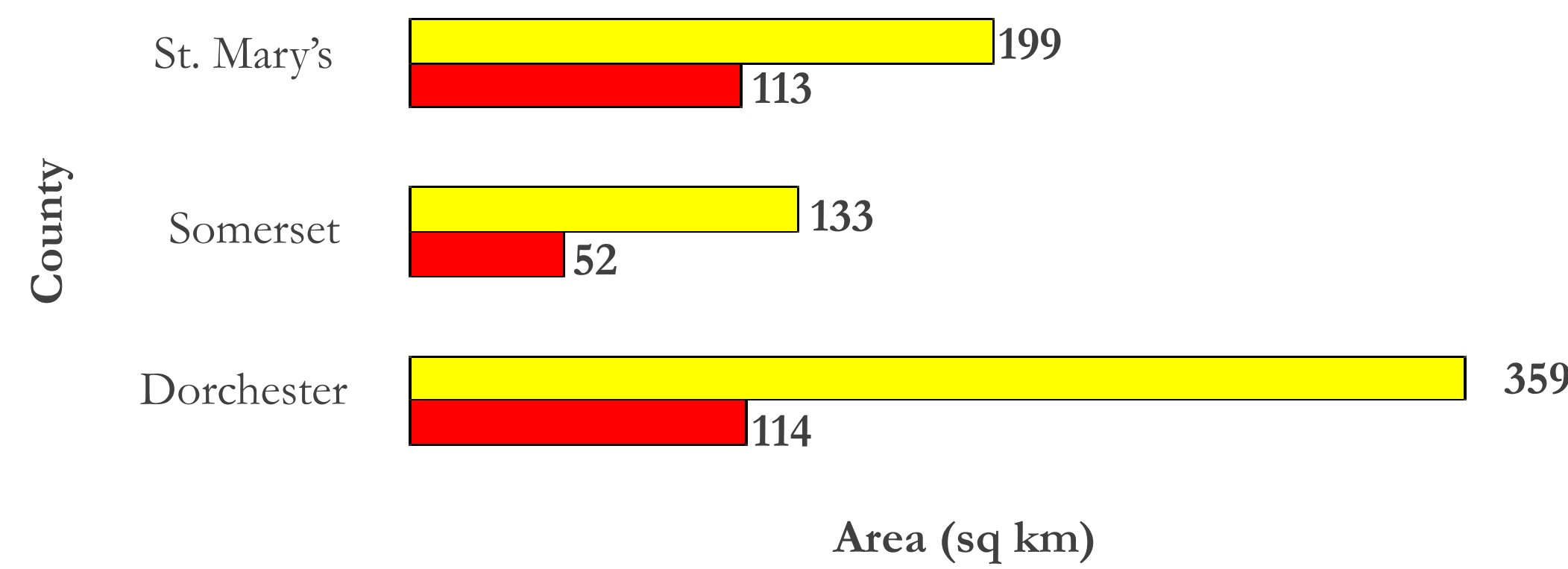
What is Marsh Migration?

- Inland movement of coastal marshes due to rising sea levels and increased salt in the soil. These marshes may outcompete local crops, causing a loss of available farmland.

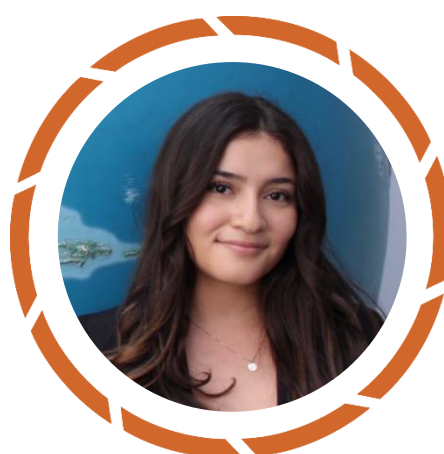
Transition from Agriculture to Wetlands 2001 – 2021



Agricultural Area At Risk of SWI in Three MD Counties



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The team would like to thank everyone who made this project possible:

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Chesapeake Bay Agriculture