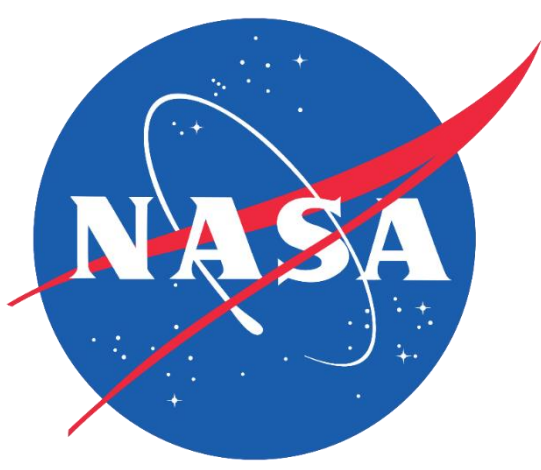




New York Ecological Conservation

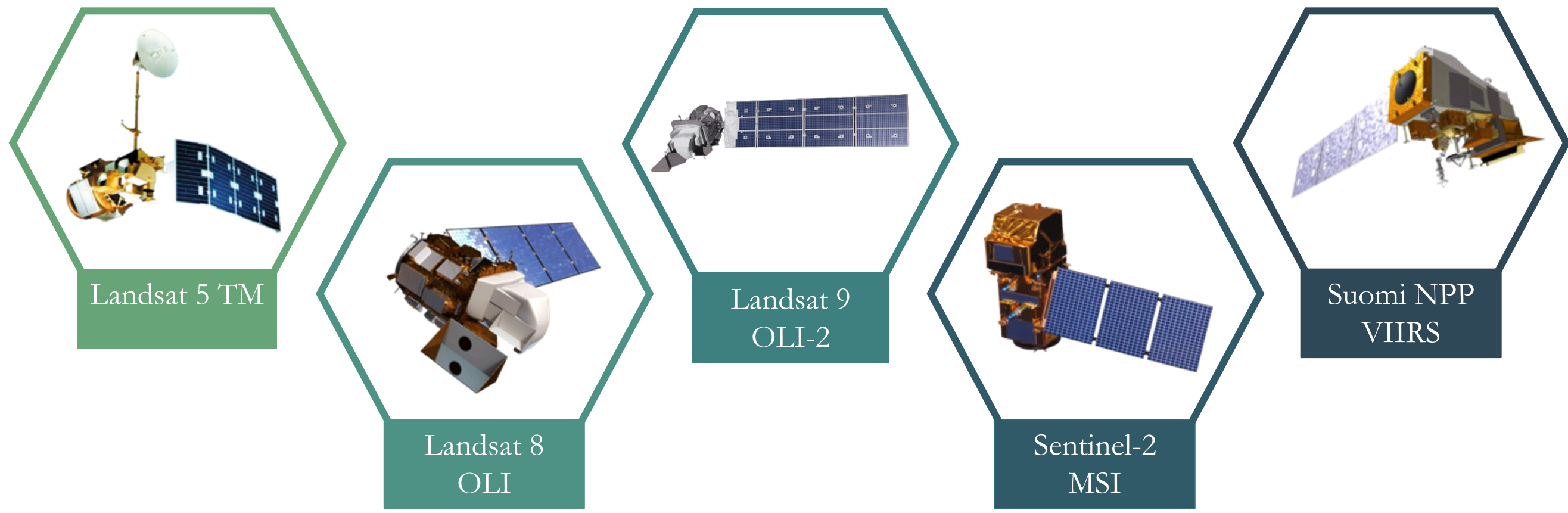
Evaluating Agricultural Conservation Easement Impact Using Earth Observations to Examine Avoided Soil Carbon Loss to Development



Project Synopsis

The team partnered with the Finger Lakes Land Trust, Genesee Land Trust, and Saratoga PLAN to determine agricultural conservation easement benefits to justify their conservation efforts and prioritize acquiring future easement sites. The goal was to estimate and examine avoided soil carbon loss of agricultural conservation easements and predict future land conversion and vulnerability to developed land transitions 2030 and 2050. Remotely sensed observations of agricultural lands and impervious surfaces (IS) allowed for characterizations across 37 years by evaluating the conversion rate from farmland to impervious surfaces.

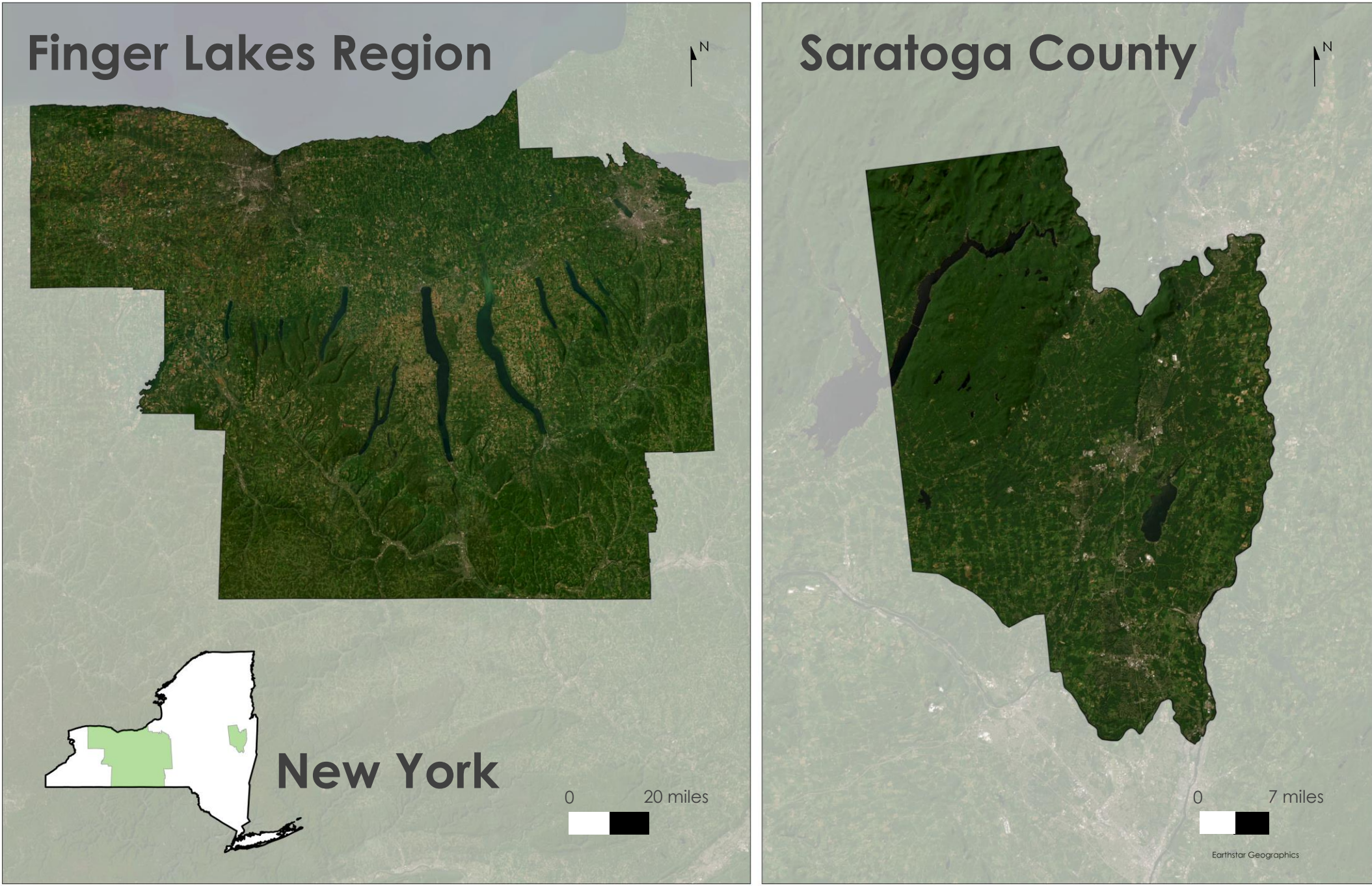
Earth Observations



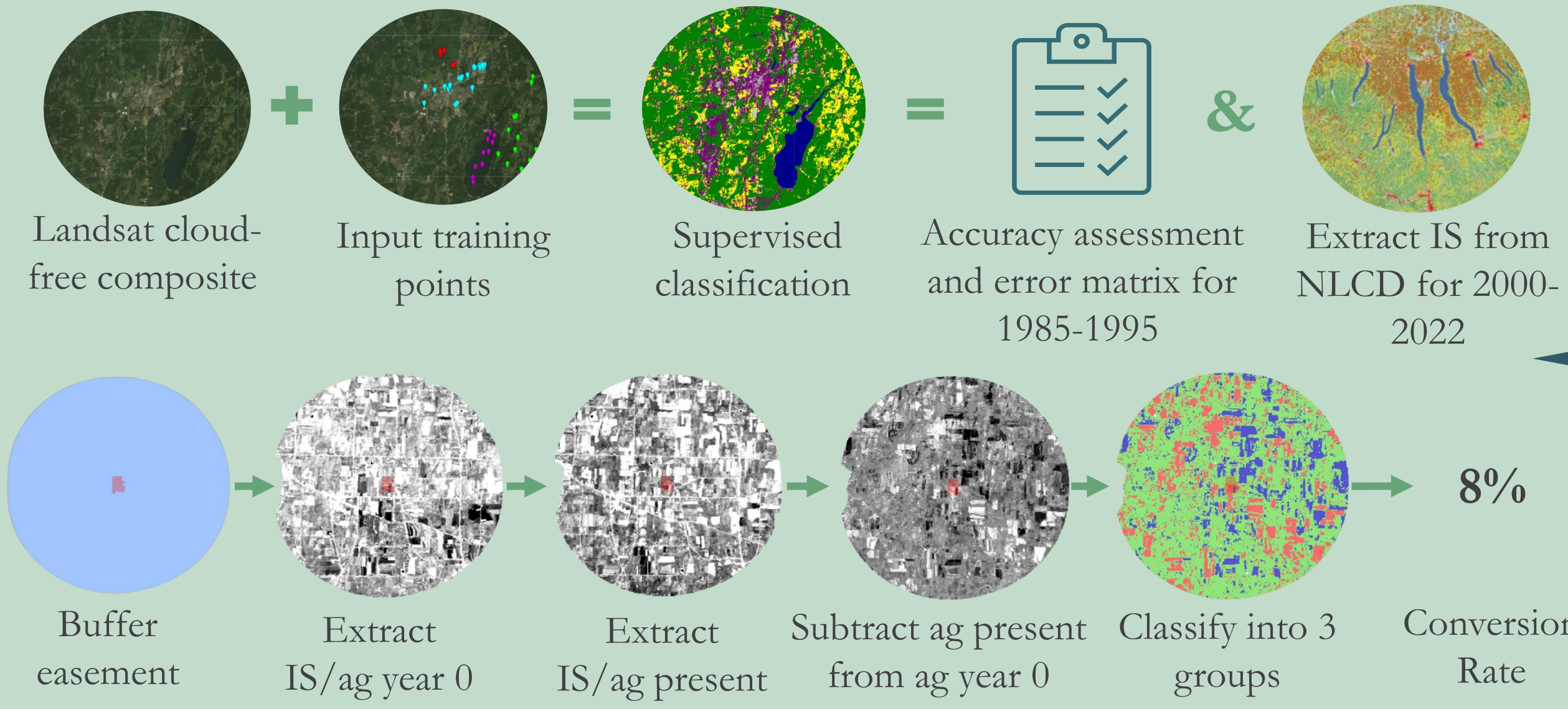
Objectives

- **Map** historical and future land cover and vulnerability using Earth observations
- **Assess** avoided soil carbon loss through impervious surface mapping and neighborhood analyses

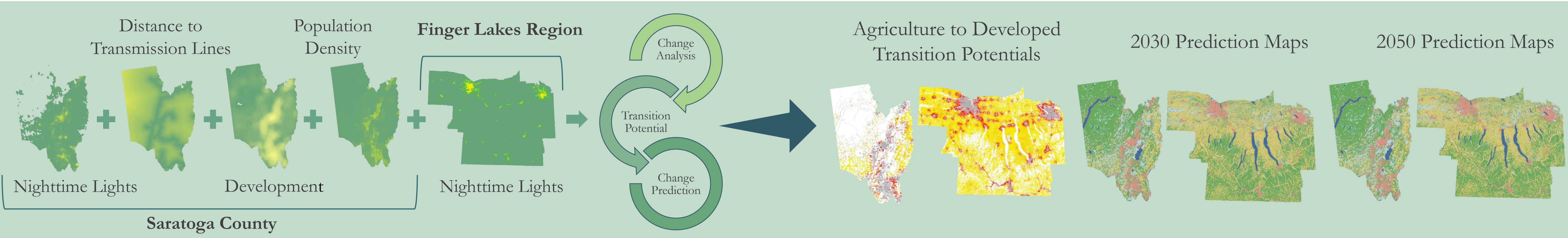
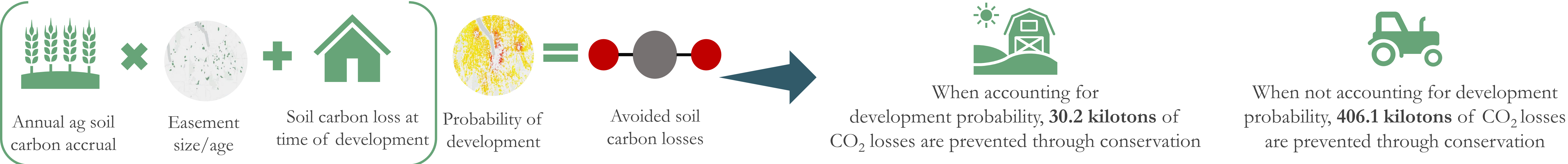
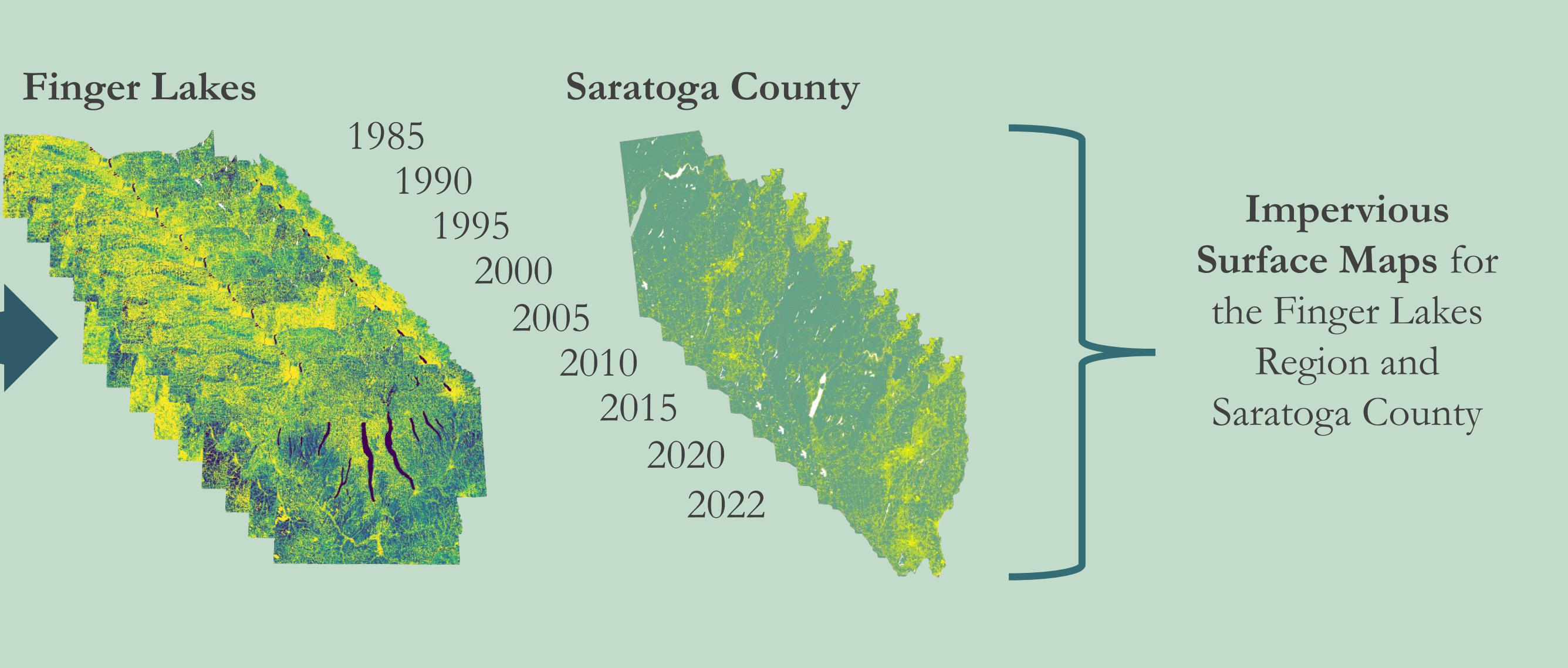
Study Area



Methodology



Results



Project Partners



Team Members



Conclusions

- The conversion rates from agricultural to urban development in the Finger Lakes Region and Saratoga County are **0.91%** and **7.00%**, respectively.
- Between 2019 and 2050, **6,643 (1.23%)** acres in Saratoga County and **38,516 (0.64%)** acres in the Finger Lakes Region are predicted to transition from agriculture to developed.
- Of our partners' easements that are more than 5% likely to be developed, an average of **227 tons** of CO₂ losses are avoided over each easement's lifetime.

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- This material contains modified Copernicus Sentinel data (2020-2022), processed by ESA.

