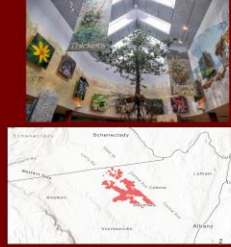


**Objective:** Create a detailed map of dune morphology in the area surrounding the Albany Pine Bush Preserve, using newly available high resolution Lidar DEM data.

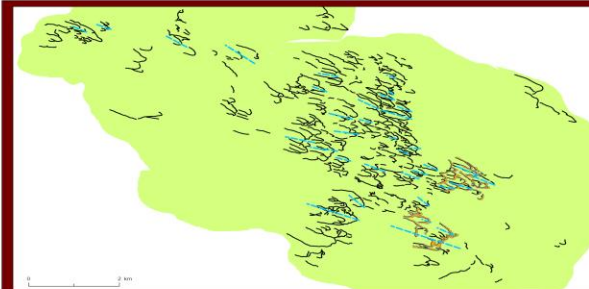
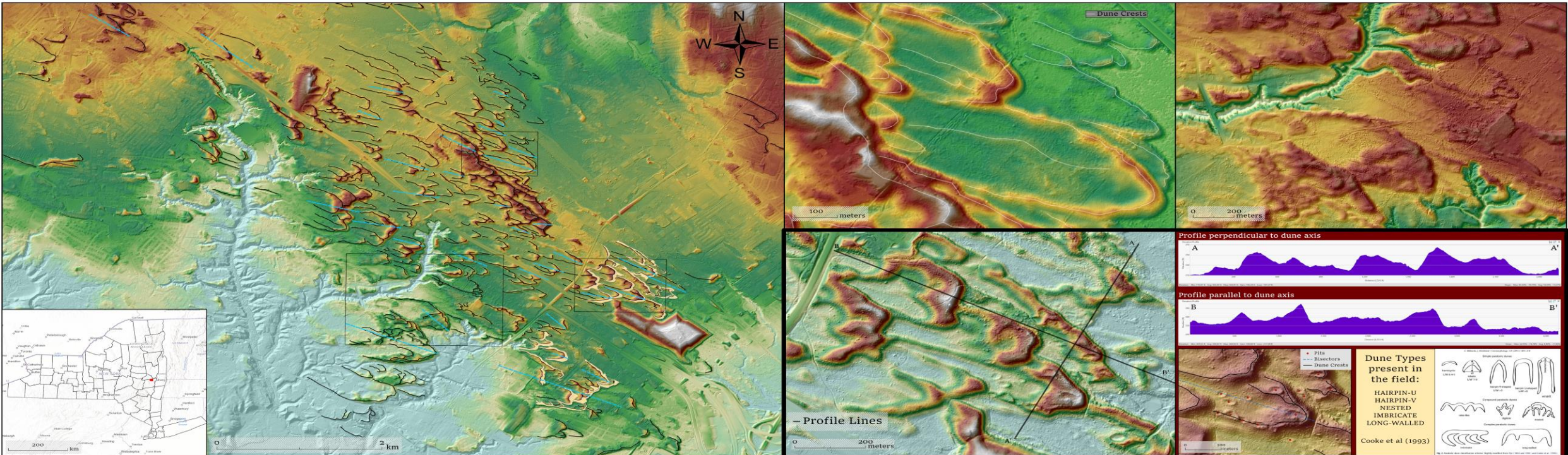
**Overview:** Dunes in the pine bush overlay glacial features deposited by the Laurentide Ice Sheet and sediments from Glacial Lake Albany. Dunes in this field are parabolic. They vary in size and shape but are orientated in a consistent direction.

**Land Acknowledgement:** It is acknowledged that the lands that this project is focused on were originally stewarded by the Mohican and Haudenosaunee First Nations peoples. Despite violence and conflict that forced many First Nations people from their home, they and their culture live on today.



**Location:** The Albany Pine Bush Preserve (APBP) is surrounded by an urban environment between Schenectady and Albany. The APBP contains wetlands and sandy dunes which form a unique environment called Pine Barrens. They are home to many diverse & rare species. Prescribed burning takes place within the preserve.

**Mapping Methods:** Using ArcGIS we created mosaics comprised of 1- & 2-meter resolution DEM LiDAR Data. The dune field was interpreted on hillshade maps draped with DEM while continuously adjusting color ramps. Interpretations captured the dune crests, slip faces, dune bisector lines as well as interesting pitted features of uncertain origin. Bisectors were plotted to better visualize wind direction at time of dune formation. Two elevation profiles visualize dune height and length.



**Observations:** 85 sq km of intact dunes  
Parabolic Dunes shapes and sizes:  
Range of Height: 2-9 meters  
Range in length ~200 to 2000 meters  
Dunes stack on the eastern edge of field;  
Many dune arms overlap  
Limbs are remarkably uniformly parallel  
Dune sand contains abundant feldspar  
Residential development has obliterated parts of dune field habitat  
Pitted features range from 1-5 meters across and no more than 1-2 meters deep

**Interpretations:**  
-Unidirectional WNW wind was responsible for all dunes in field  
-Dunes are formed by immature sediments which migrated only a short distance from their source  
-They probably formed rapidly  
-APBP Dune Field is part of a larger system in Hudson Valley  
-There is a need to protect remaining habitat from further anthropogenic development

**Conclusions**  
Dunes are consistent with present day westerly winds. There is no evidence of dunes formed by NNE winds like dunes in the Saratoga Sand Plains only a short distance to the north. APBP dunes are similar in age and orientation to parabolic dunes in the Rome Sand Plain, western Mohawk Valley and likely share an origin

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