

# Keeler Dunes Sand Volume

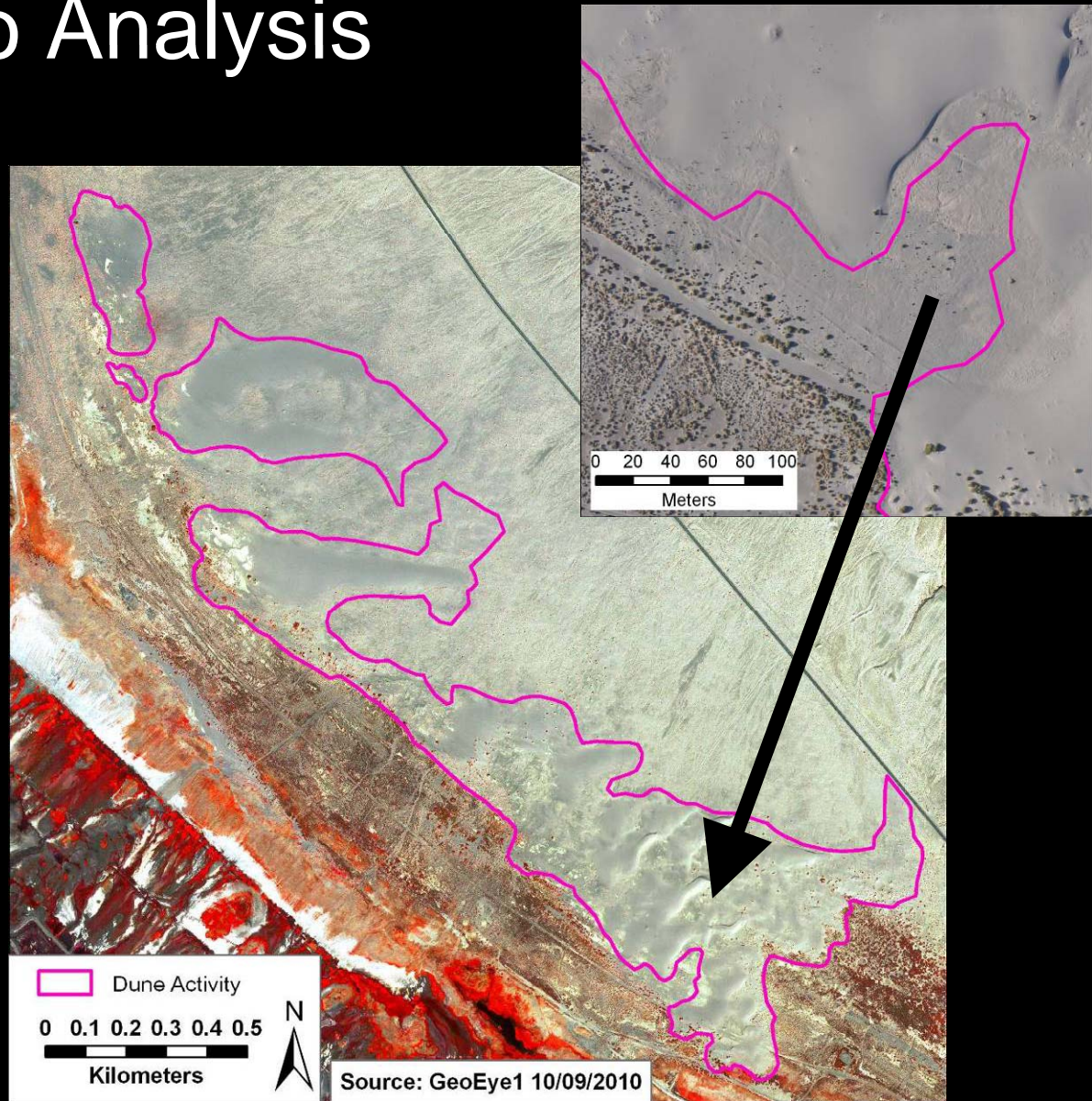
## A LIDAR GIS Analysis

HydroBio,  
Advanced Remote Sensing



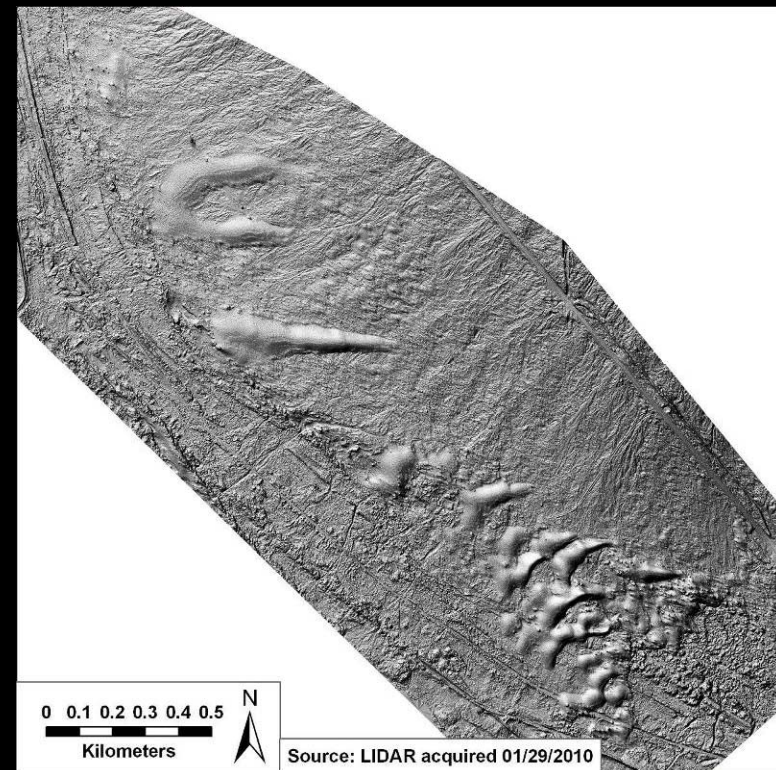
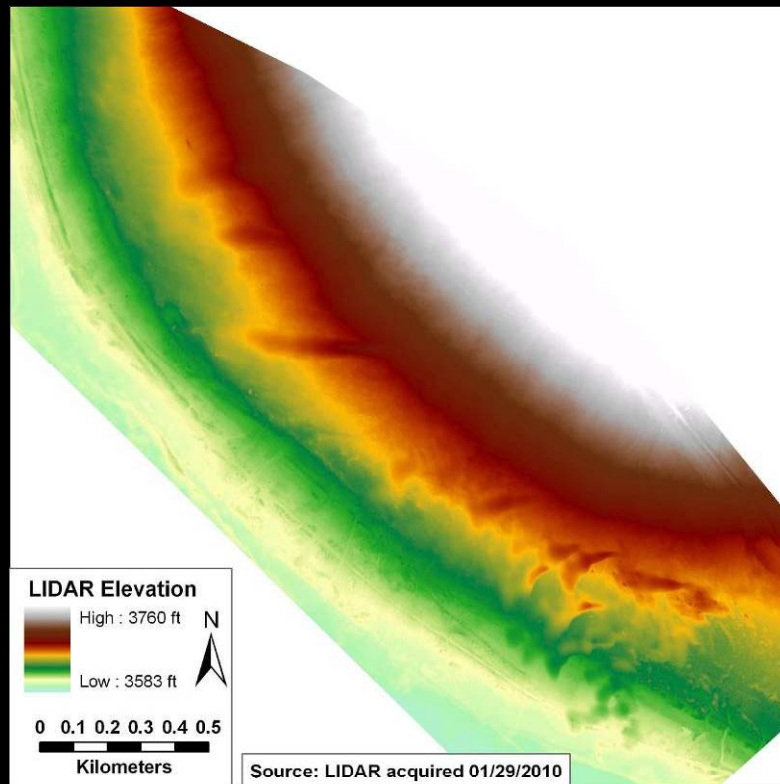
# Aerial Photo Analysis

- Delineate active dunes
- This sets the model boundary
- To evaluate accumulated volume



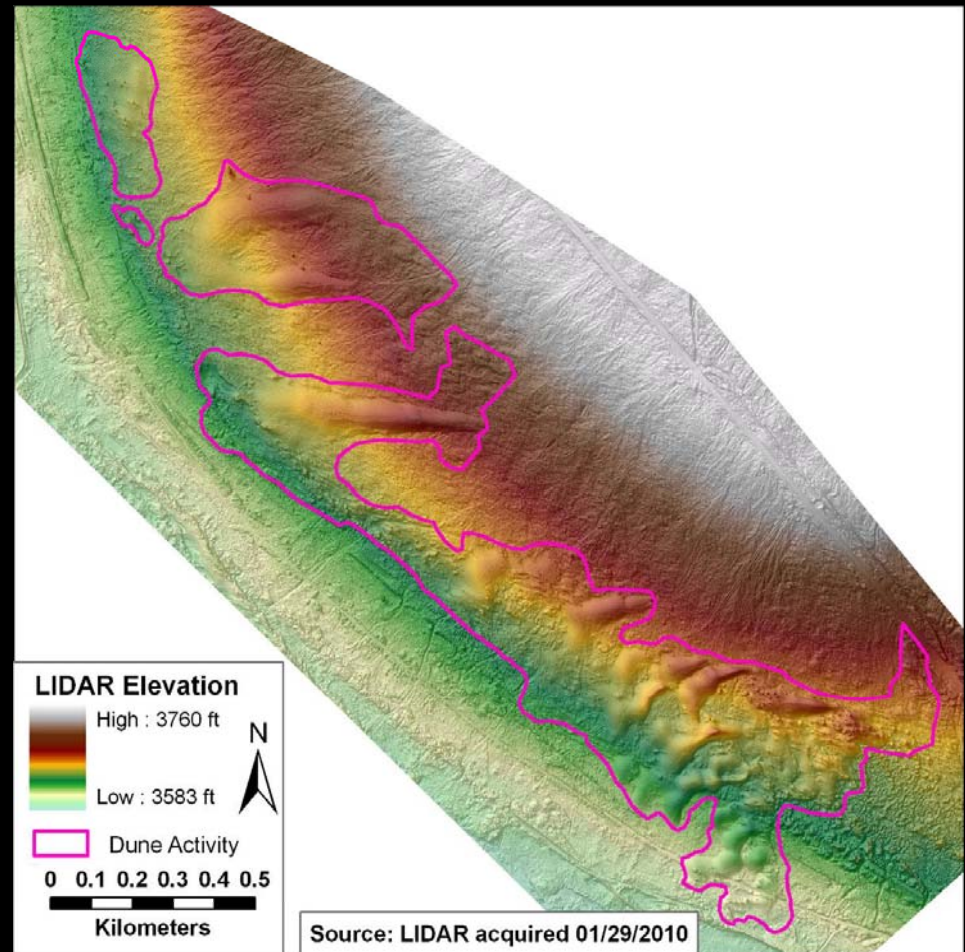
# LIDAR Data

- 0.5 m pixels
- Lidar works best on bare earth surfaces, like dunes



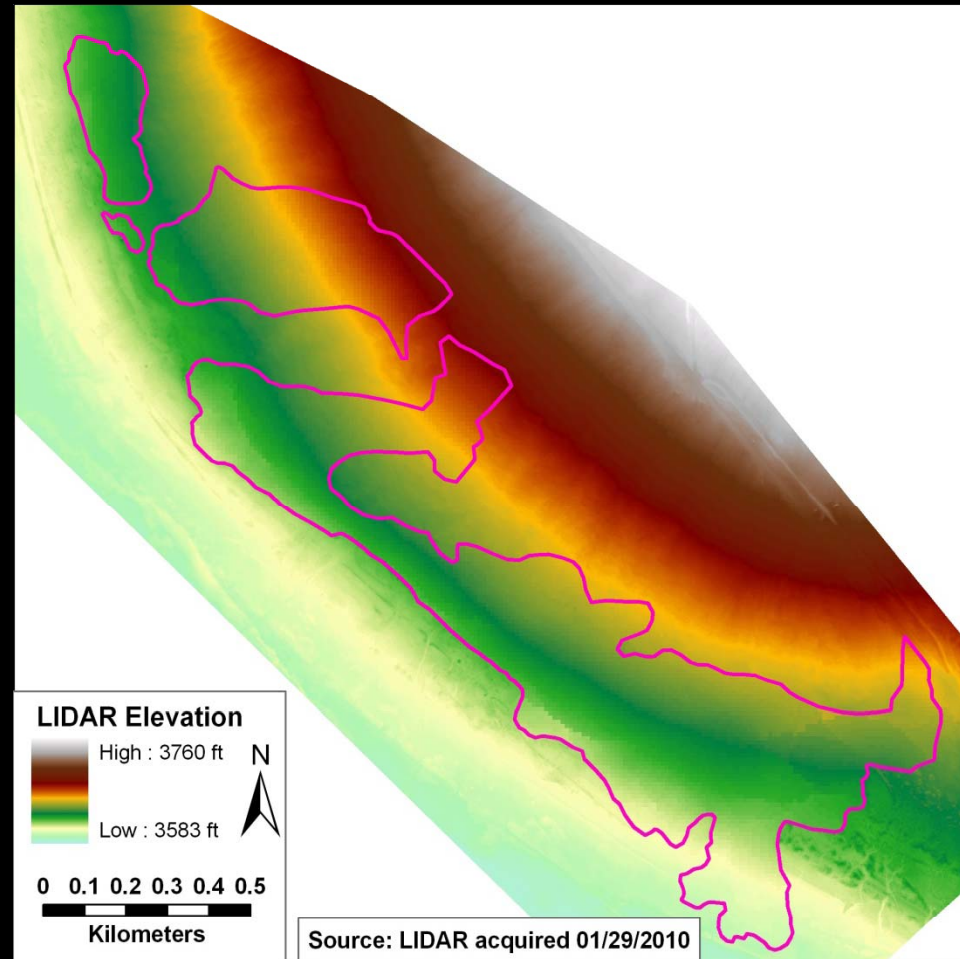
# Existing Conditions

- Combine the model boundary with the LIDAR

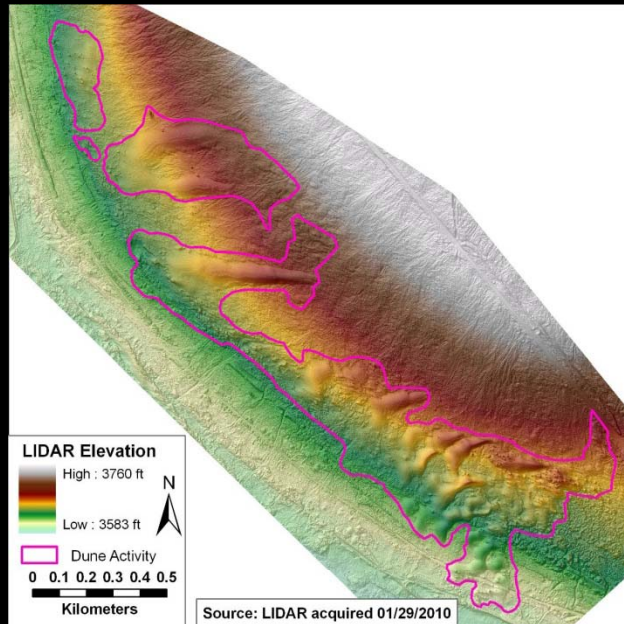


# Calculate Natural Ground Surface

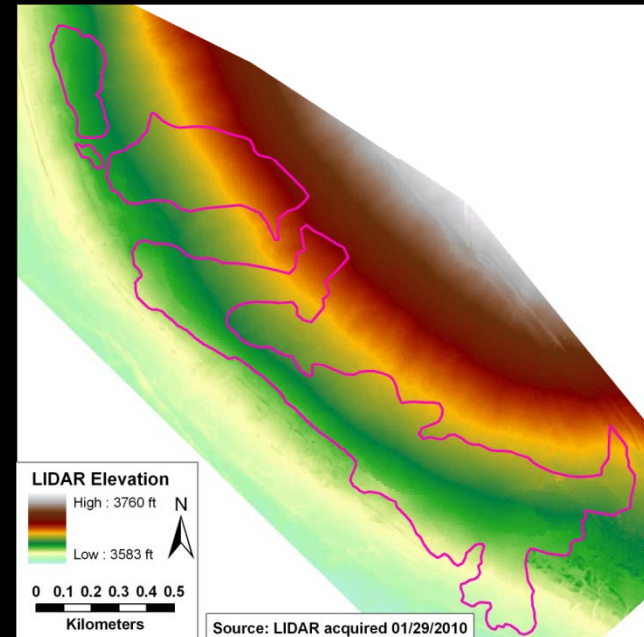
- Replace all elevation values outside of dune boundaries to represent the landscape without dunes.
- Kriging using remaining elevation points



# Change Detection



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- Subtract the calculated natural surface data set from the LIDAR data set.

# Change Detection Results

- Areas with no dunes show as clear
- Minimal sand deposits, light blue
- Green thru red are significant deposits
- Up to 18.29 ft of deposits are modeled
- 426.89 acre feet/  
1.8 million cubic ft

