

Grapppling the Invisible: A Derelict Crab Pot Removal Pilot Study in the Delaware Bay- Lessons Learned

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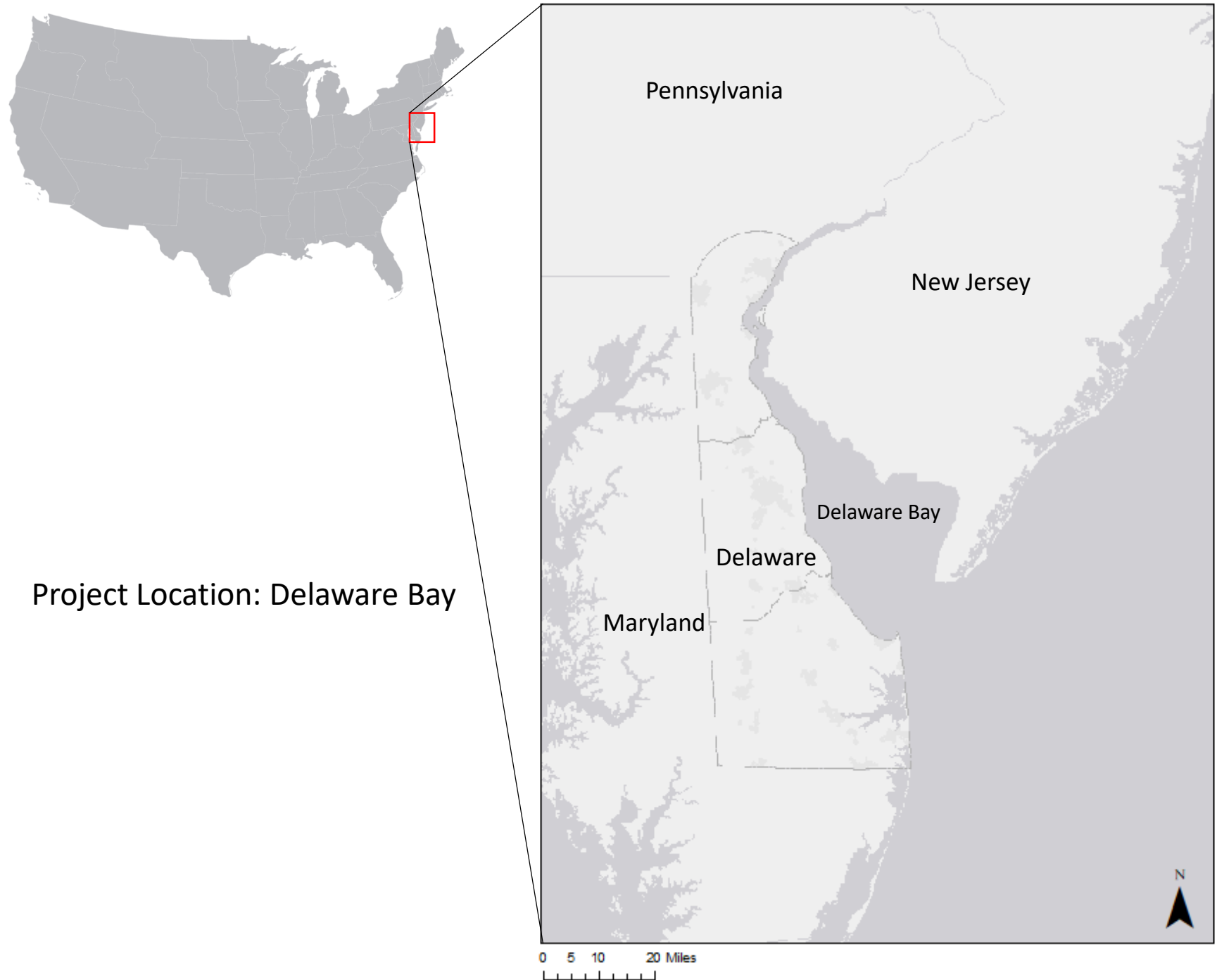


Delaware Coastal
Programs



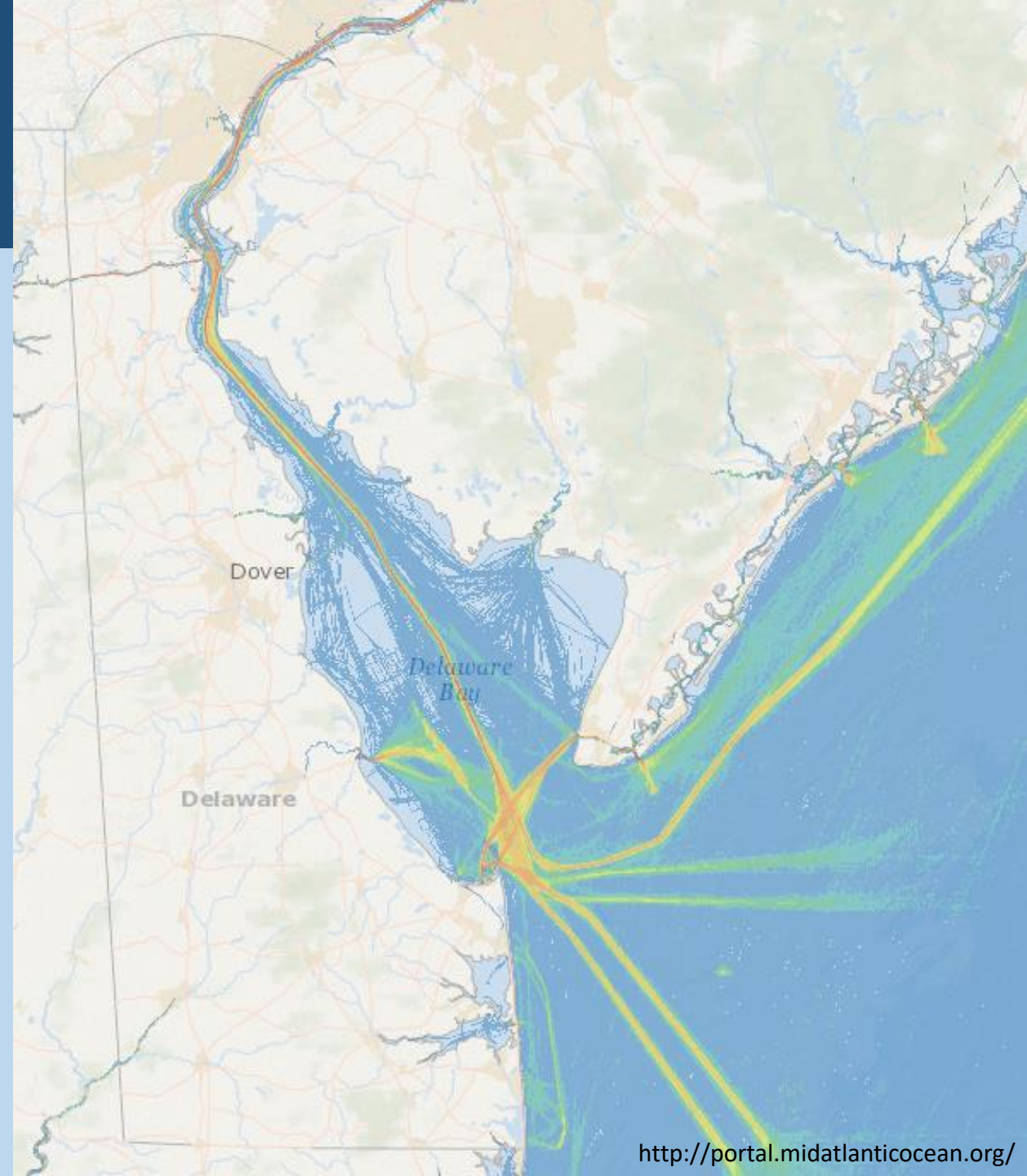
Project Overview

- NOAA Marine Debris Removal Grant
- Connecting the Mid-Atlantic
- Similar goals, different challenges



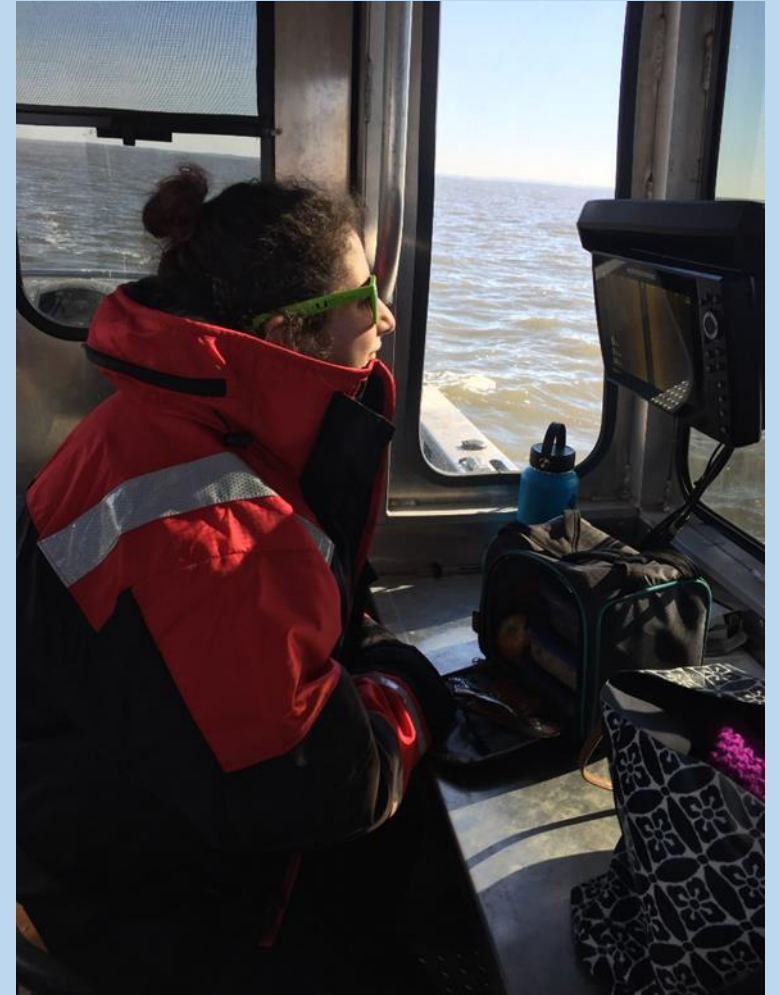
Delaware Bay vs. Coastal New Jersey Bays

- Much deeper and dredged regularly
- Very open to the ocean and not extremely protected
- Much stronger currents and greater tidal flux



Contracting with Stockton University

- Identification of pots in the target area
- **Comparing the efficiency and accuracy of the Klein 3900 to the Humminbird Helix 10**
- Testing pot removal methods



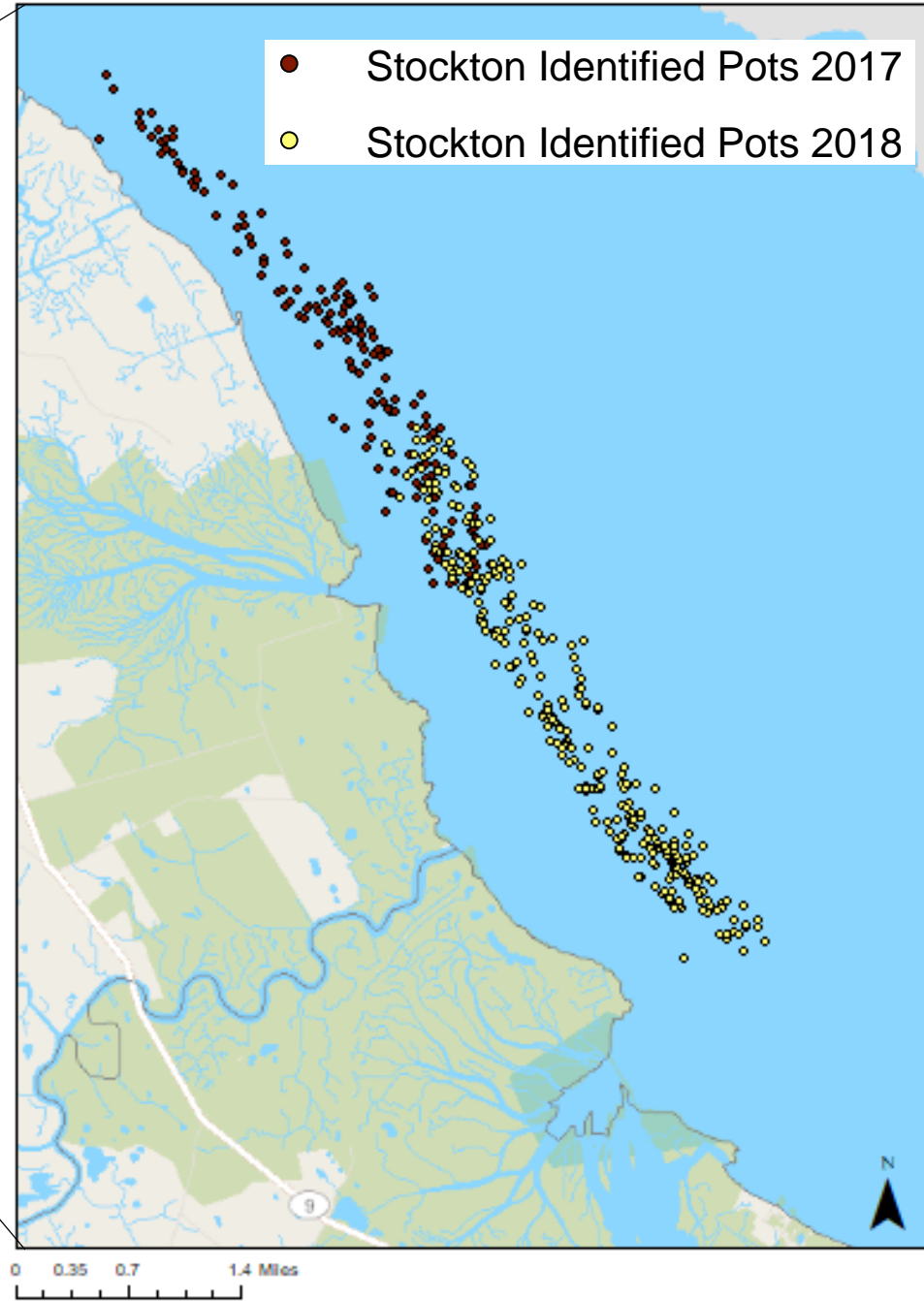
Identification

517 targets!

~ 6 miles of coast

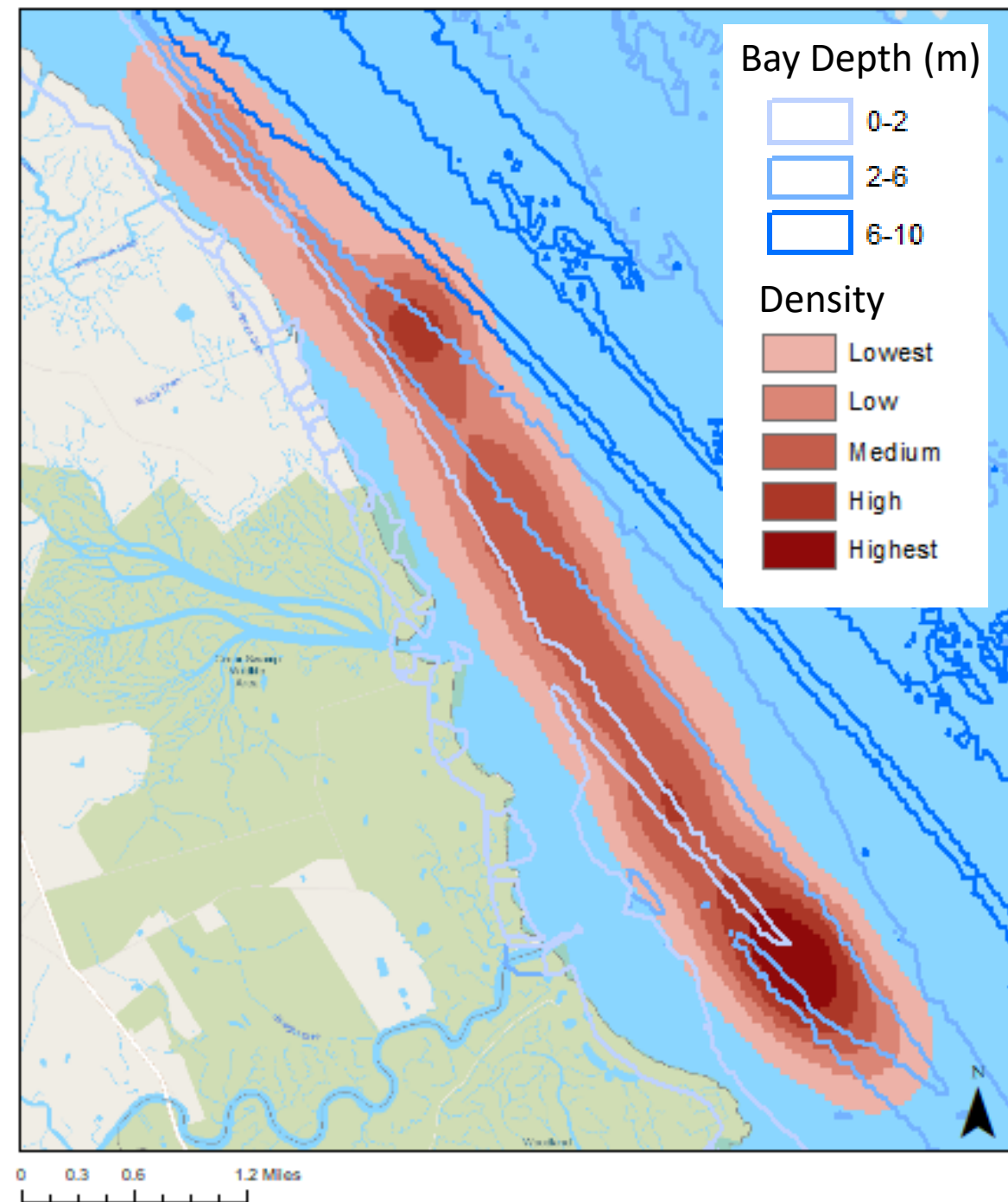
2 days of scanning

- Stockton Identified Pots 2017
- Stockton Identified Pots 2018



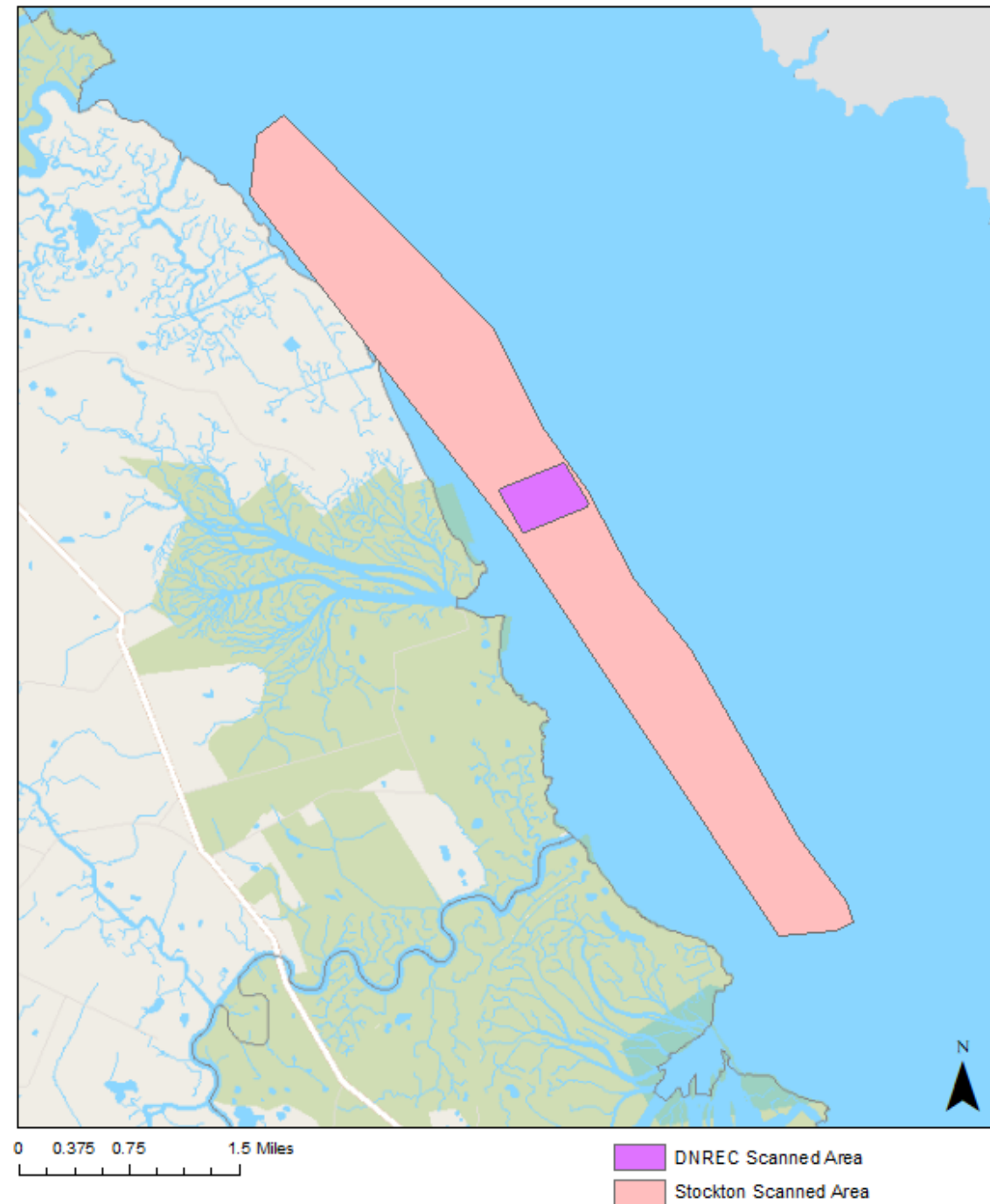
Density

- Follows the 0-2 MLW depth line
- Raises further questions
 - Why are pots aggregating near the shoal tip?

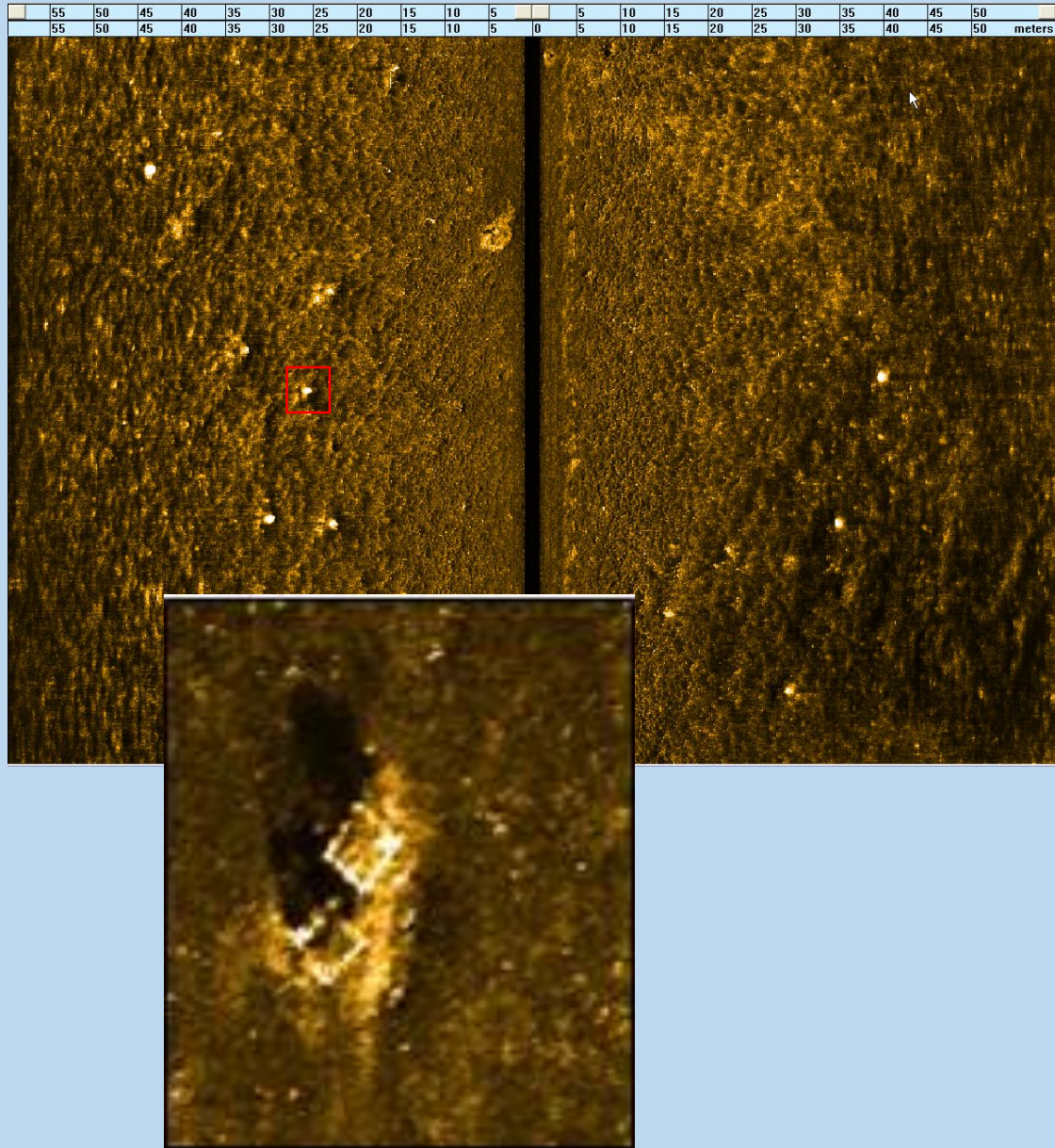


Efficiency: Klein vs. Humminbird

- 1 Day of scanning:
 - Stockton 1.5 sq miles
 - DNREC 0.2 sq miles
- Klein 3900 scanner is 12 times more efficient in covering the same area

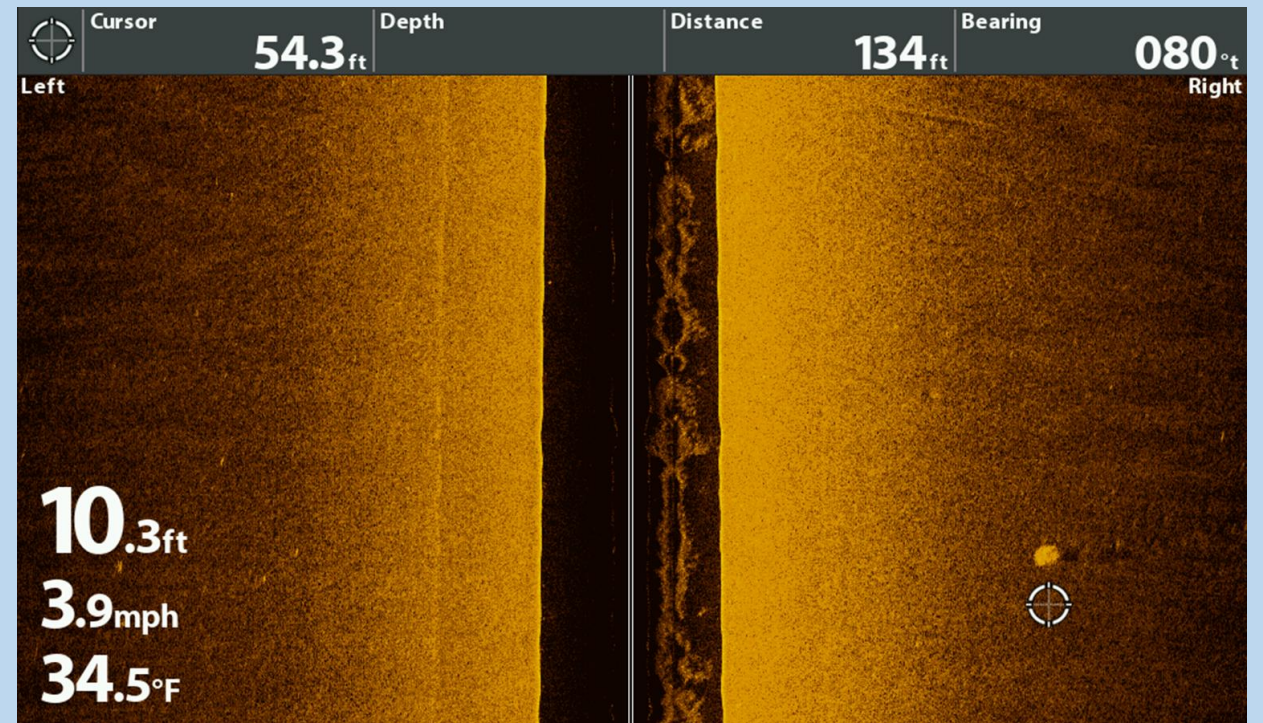


Klein Scanner with 165 foot swaths



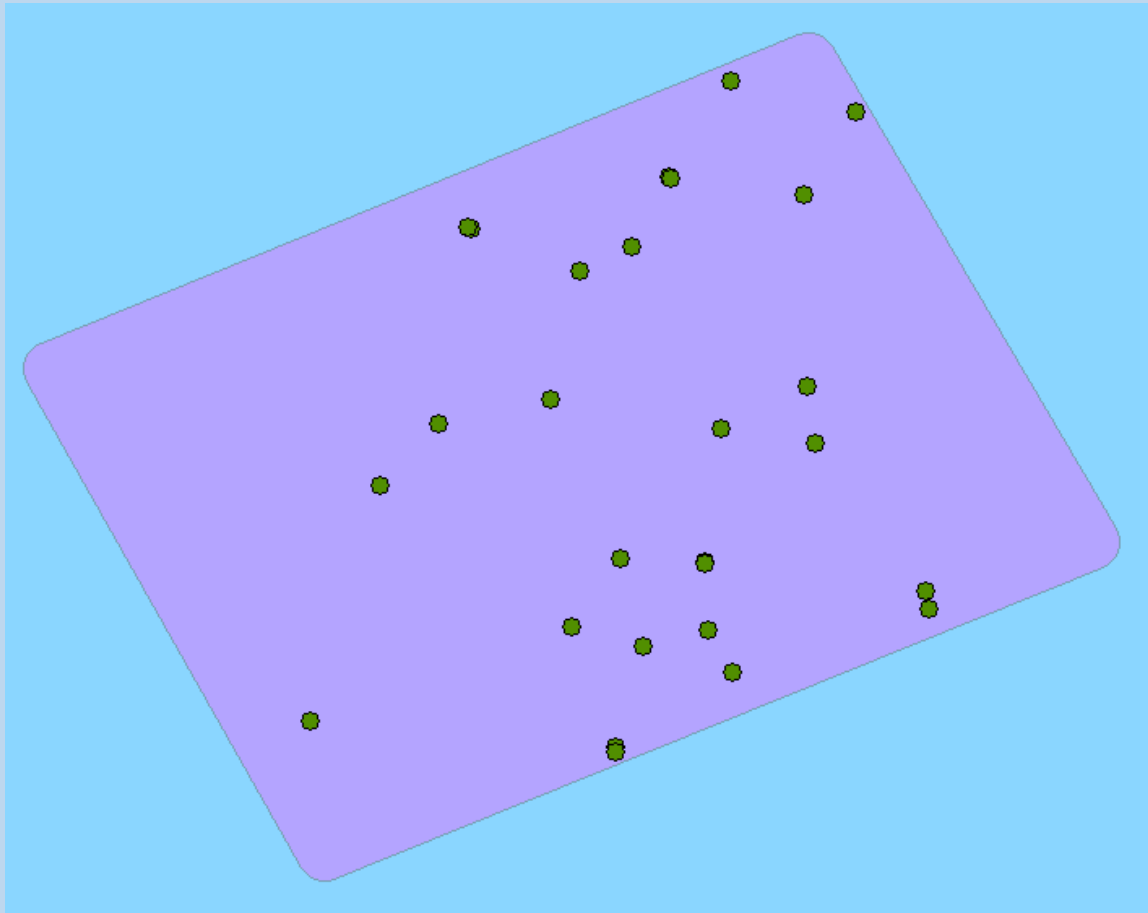
Accuracy: Klein vs. Humminbird

Humminbird Scanner with 80 foot swaths

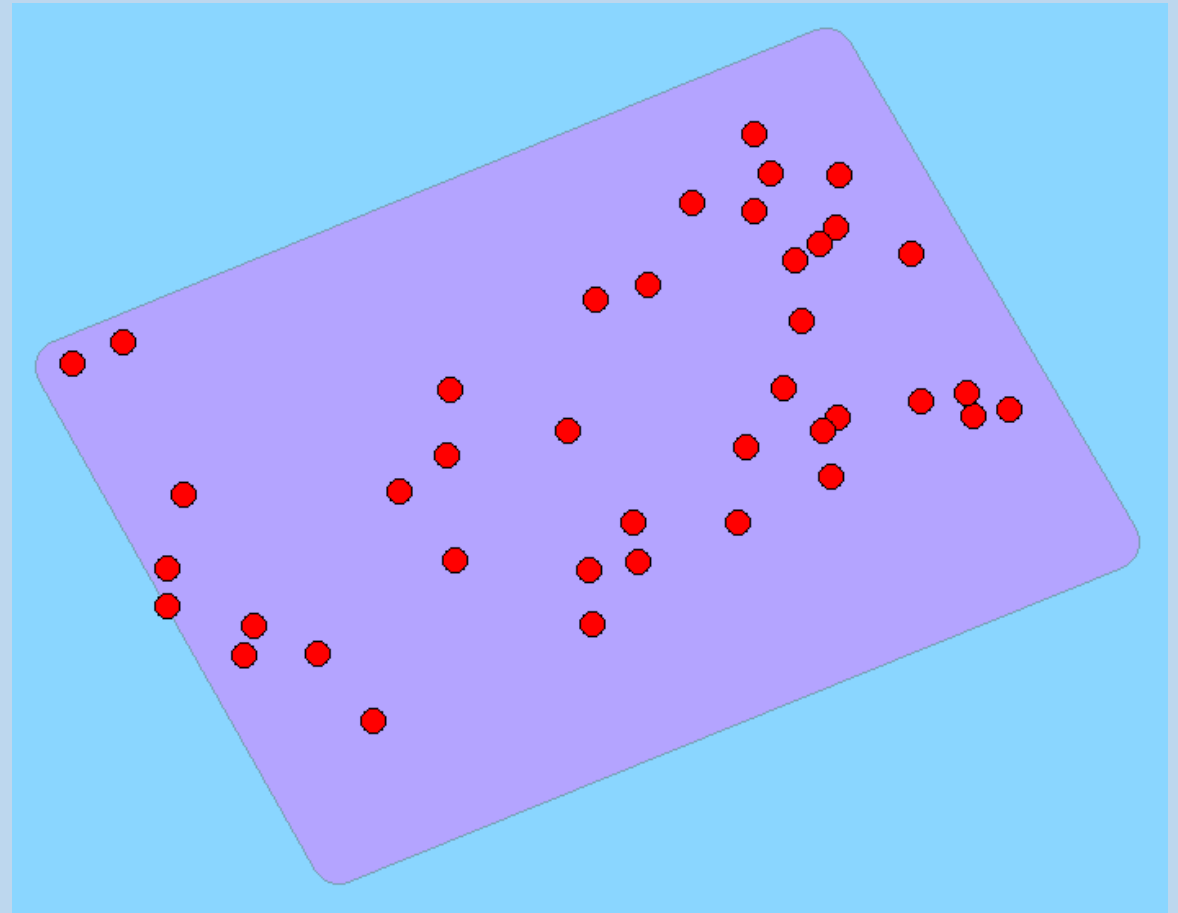


Accuracy: Klein vs. Humminbird

Stockton 2018 Scanned Pots - 27

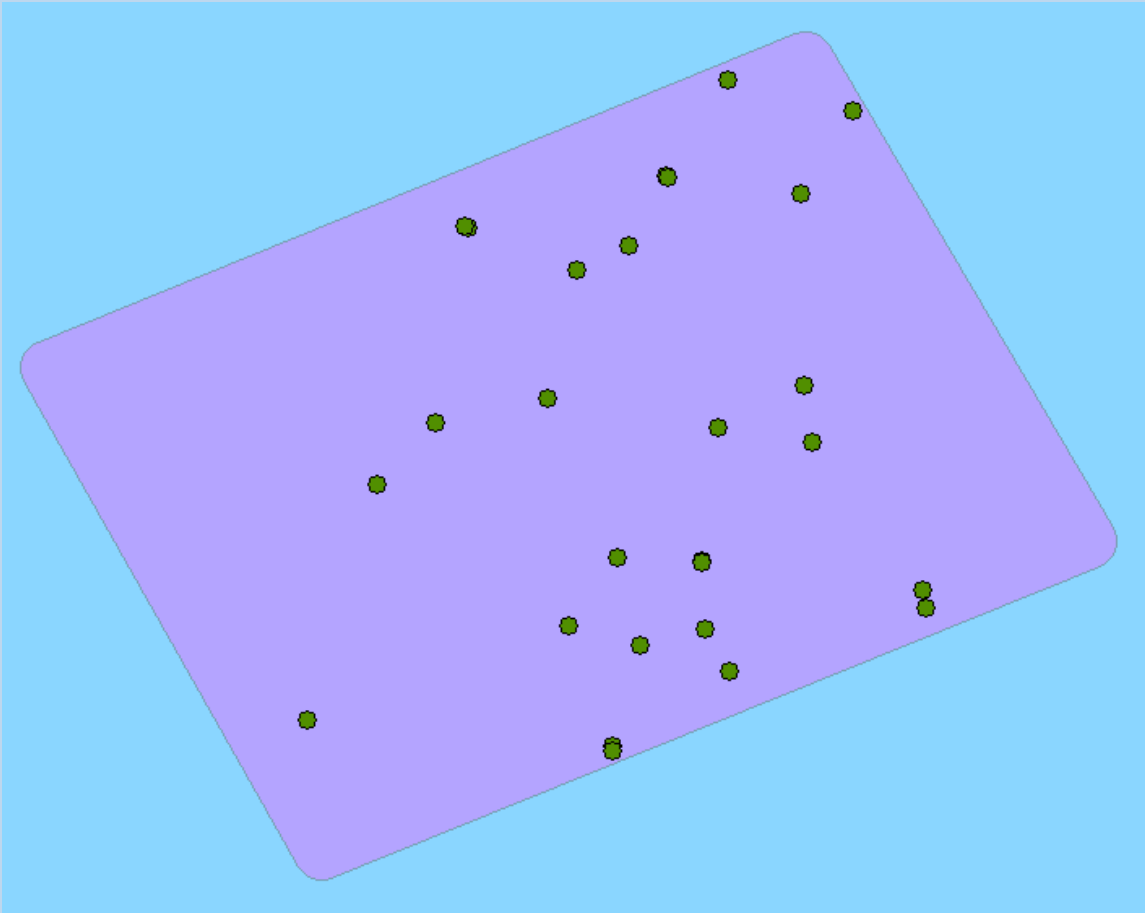


DNREC 2018 Scanned Pots - 40

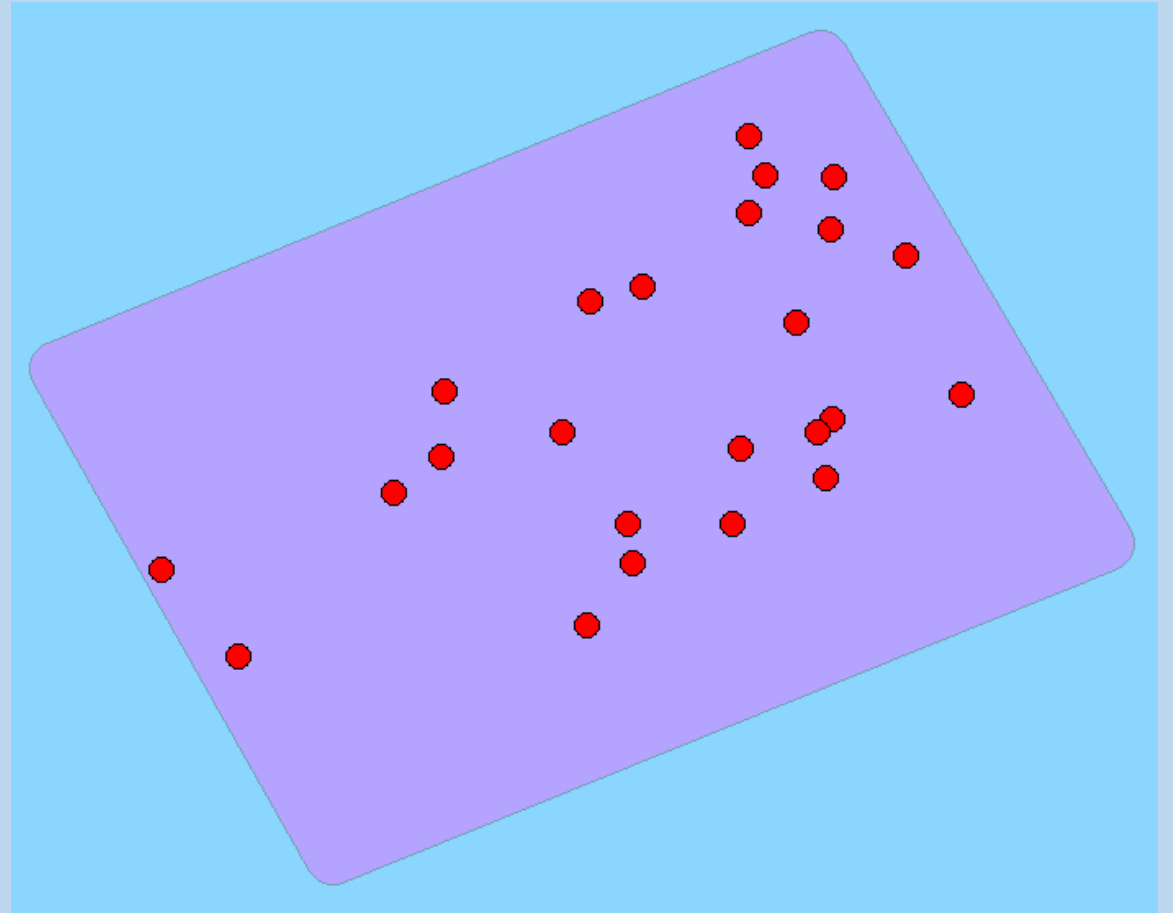


Accuracy: Klein vs. Humminbird

Stockton 2018 Scanned Pots - 27



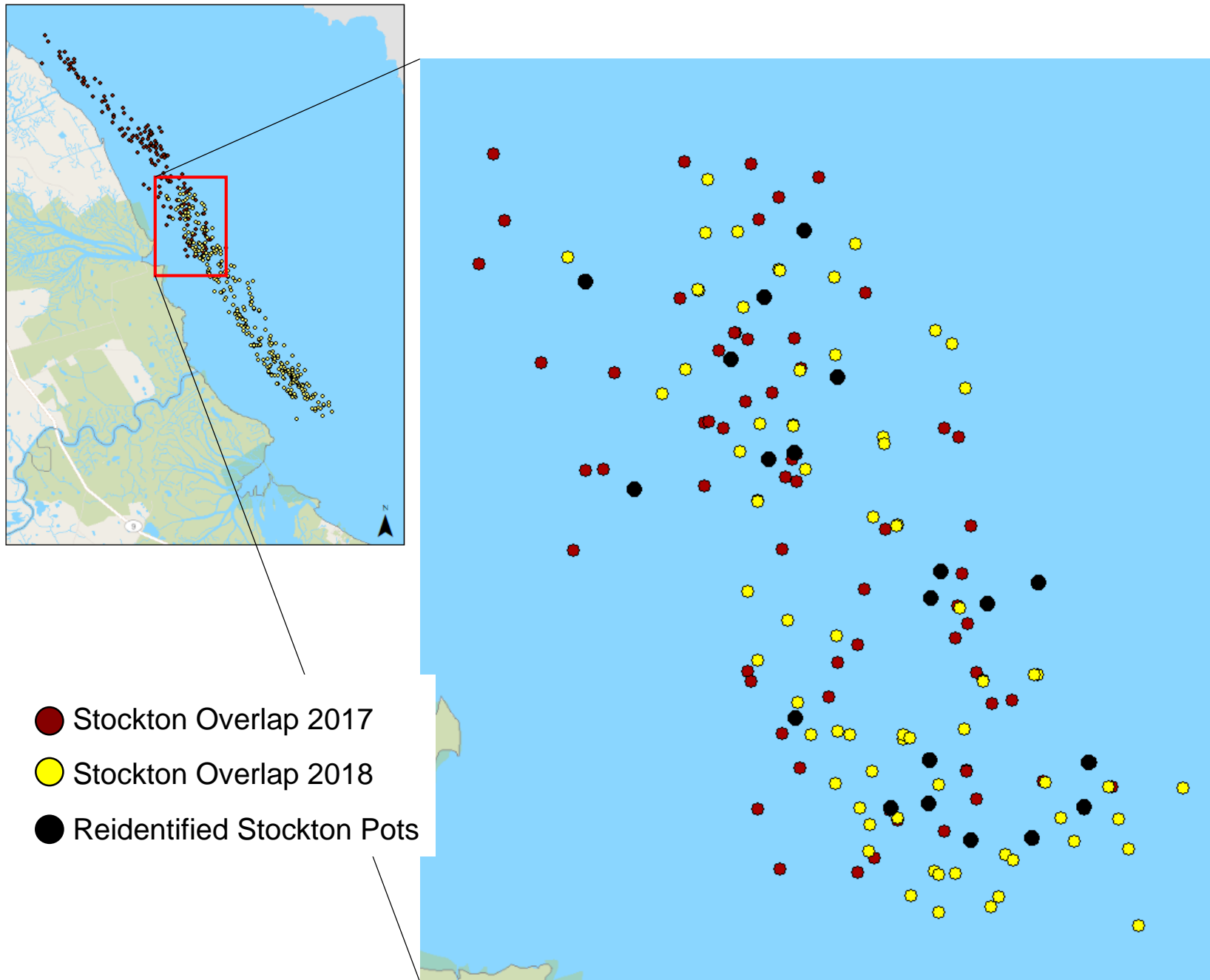
DNREC 2018 Scanned Pots - 24



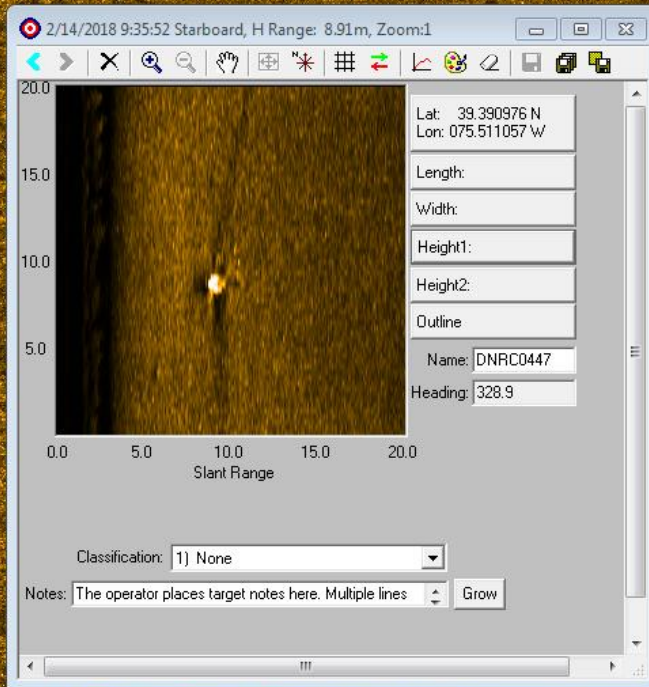
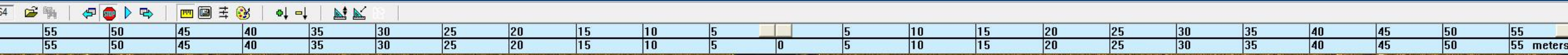


Pot Movement

- Scan 1- Mid-December
- Scan 2- Mid- February
- 20 pots identified in the same location (Klein to Klein)
- 77% of pots moved 3+ meters away



Scouring



ICE!!



Photo Credit
Left: John Sparks
Right: NASA

Conclusions

- Pots are aggregating in shallow shoal areas
- The Humminbird side scanner is not ideal for original identification of pot abundance and density
- Low confidence in watermen's ability to find and remove pots



Recommendations

- Focus on a loss prevention program
- Trial more deep water techniques of removal
- Create a pot recycling program so watermen aren't ditching their old pots



Thank you Stockton University Marine Field Station!

