



Isle of Palms Beach Preservation 2007-2022

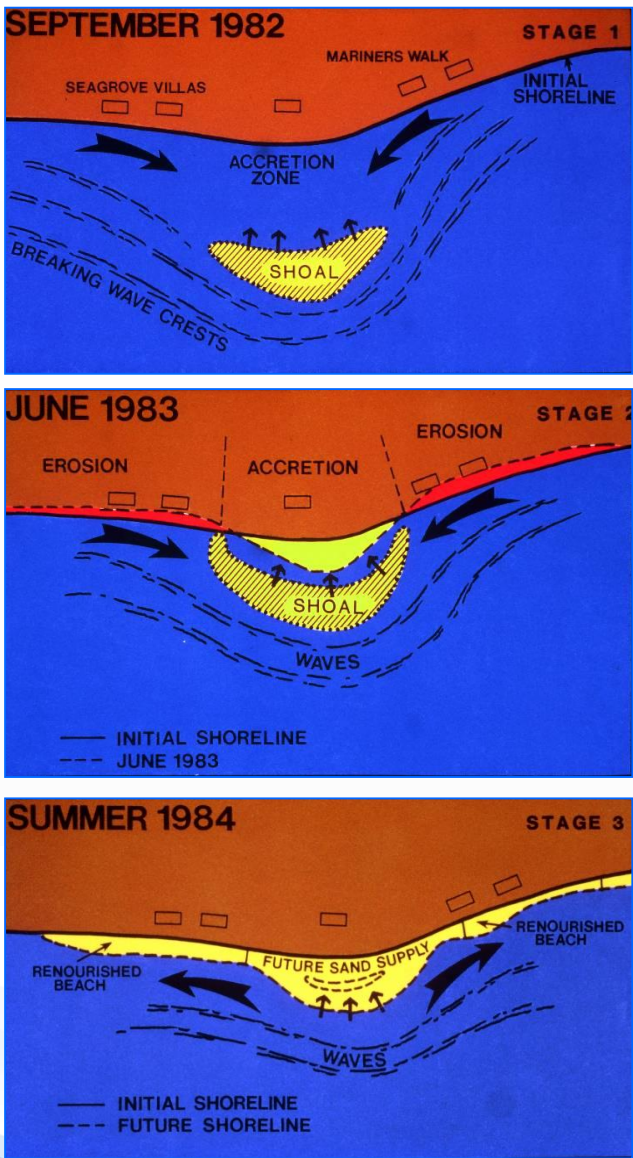


Coastal Processes

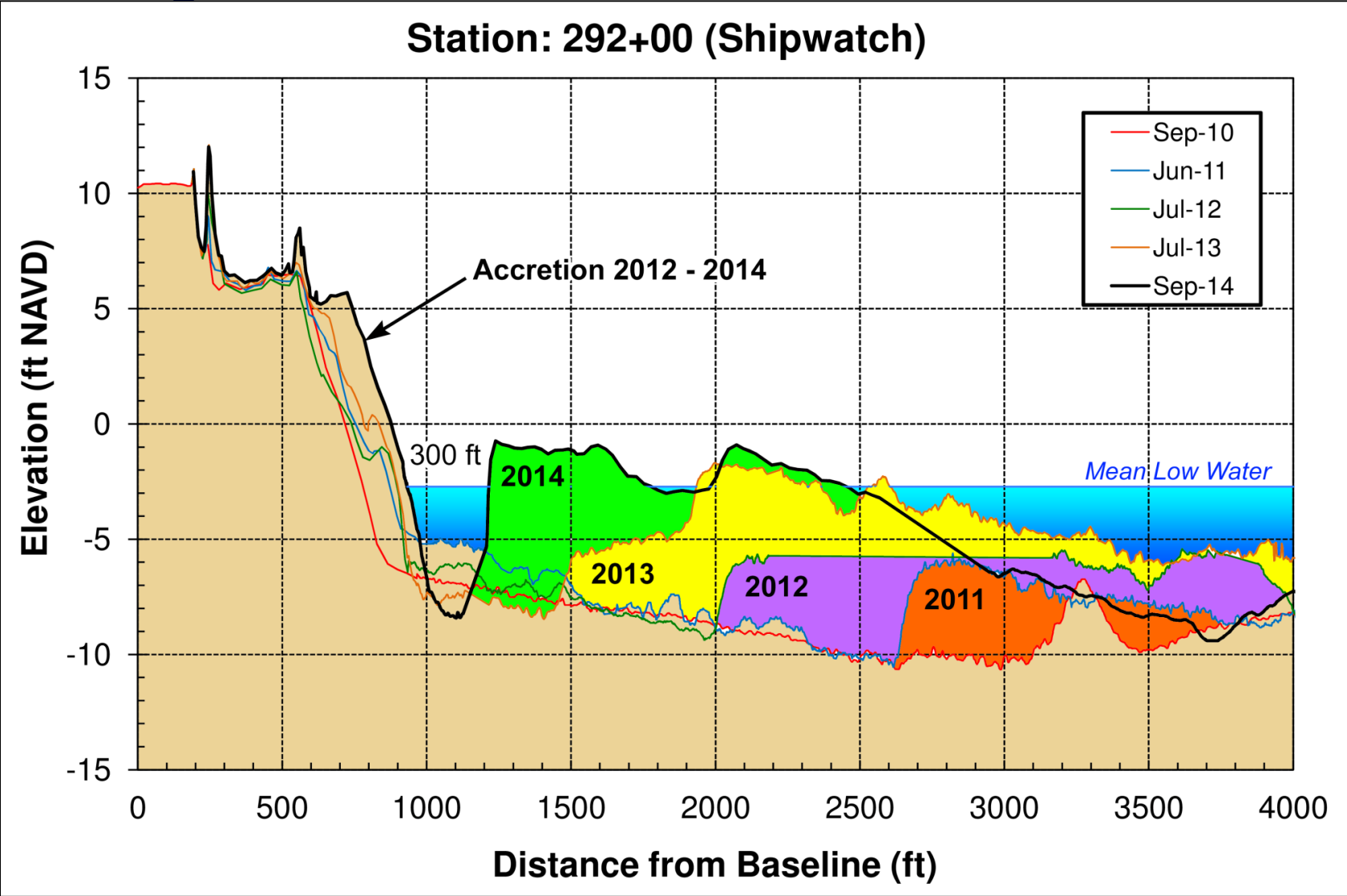
- Inlet-Dominated
- Sand from north end moves south over time
- Sand “packages” as shoals attach or nourishment is added



Historical Erosion Rates



Shoal Migration

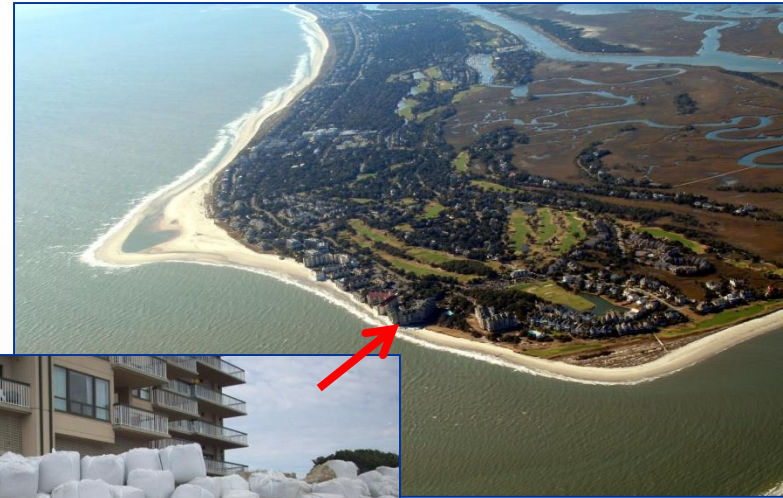


Beach Condition History

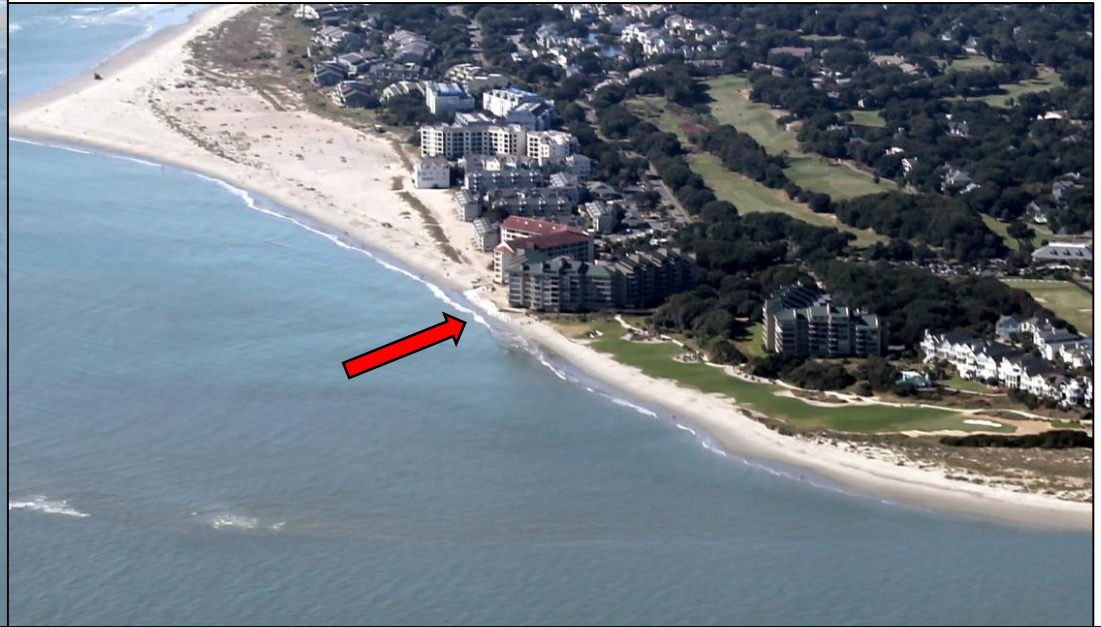


Project History

- 1983 – Nourishment from marina dredging
- 1980's-1990's periodic scraping from shoals
- 2008 – Nourishment ~900,000 cy via offshore dredge (\$10 mil)
- 2012 – 80,000 cy scraping (\$245k)
- 2014-2015 – 240,000 cy scraping (\$800k)
- 2018 -

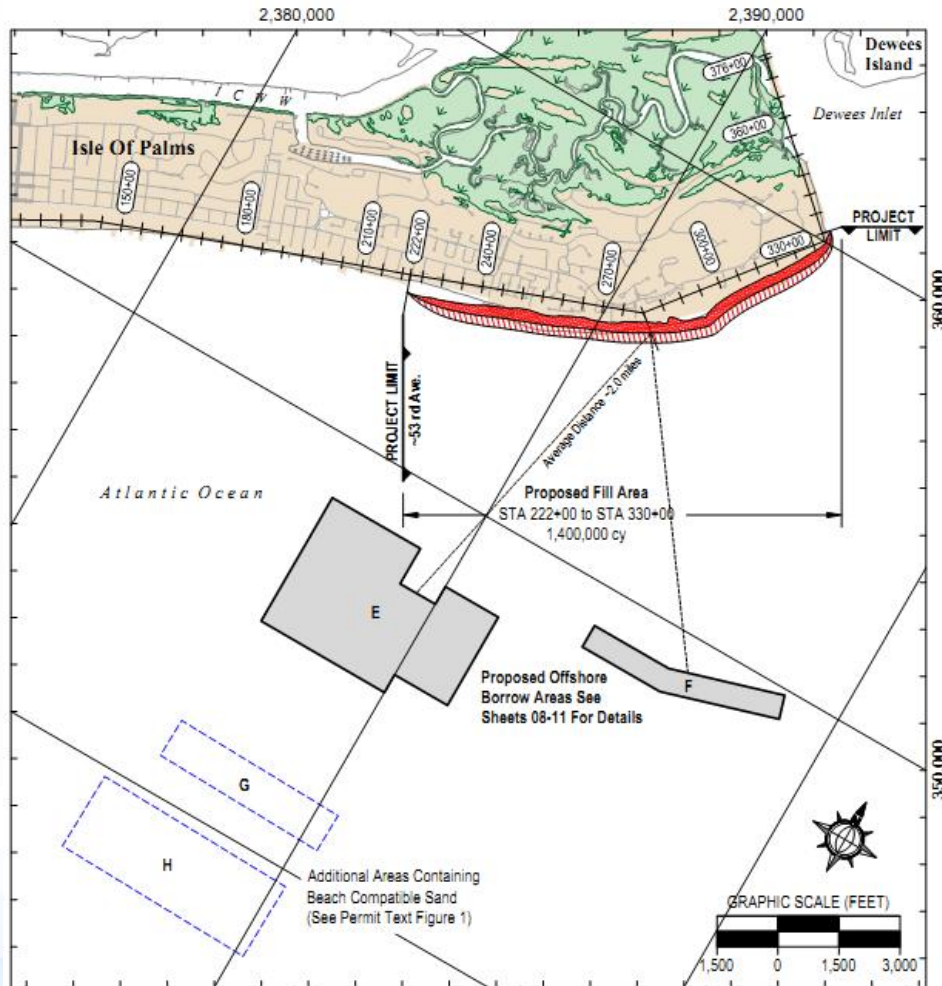


Erosion Hot Spots



2018 Project

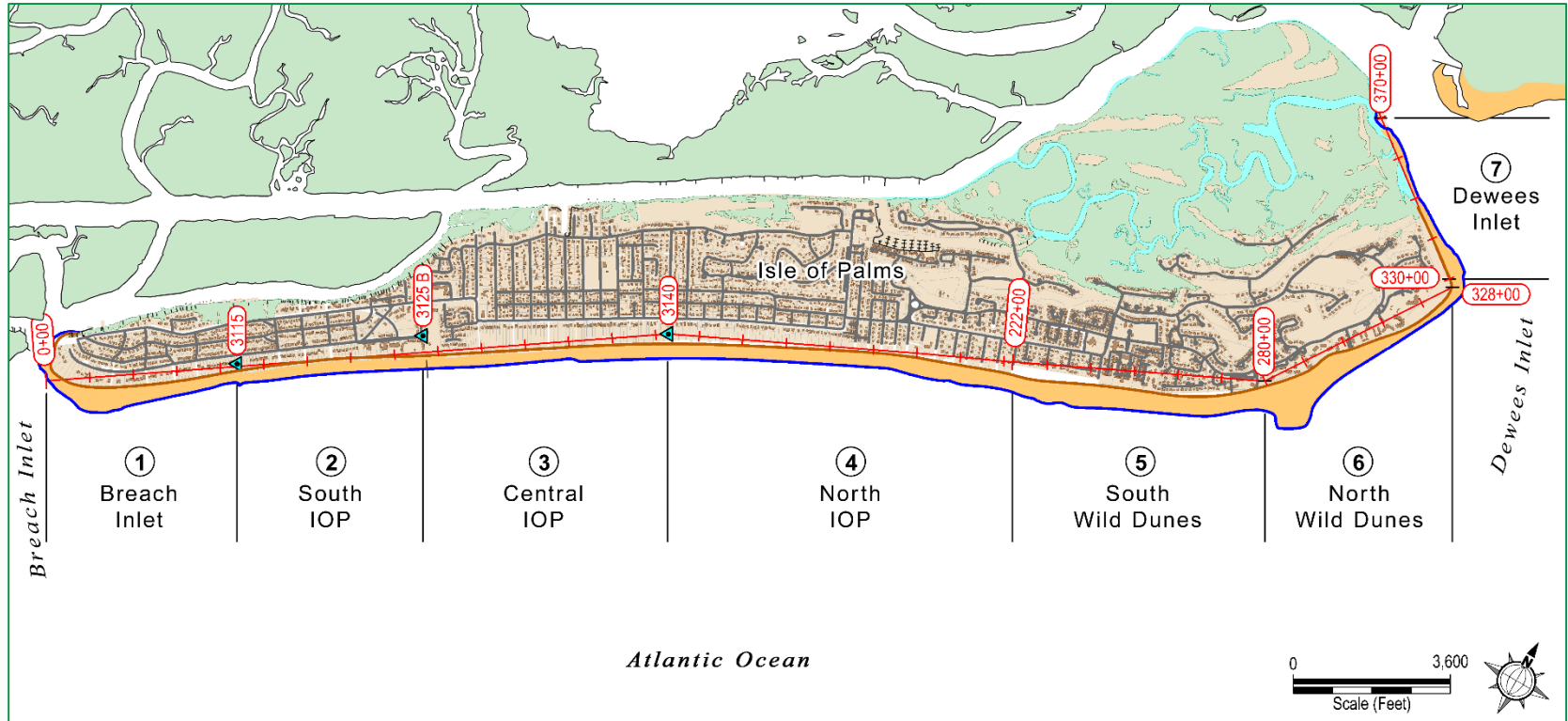
- 1,676,518 cy of sand
- \$13,545,585.70



2018 Project

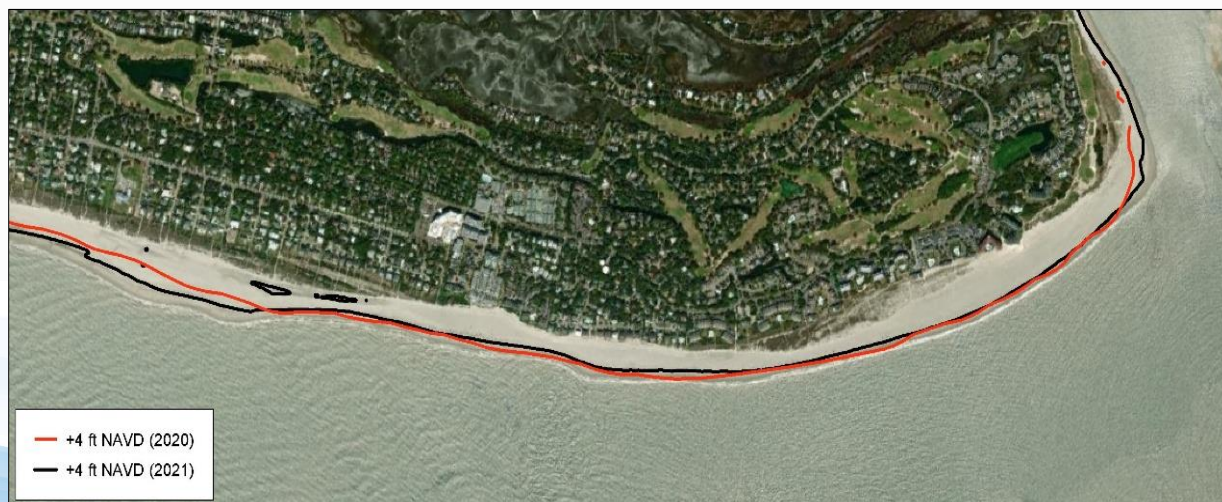


Monitoring Areas



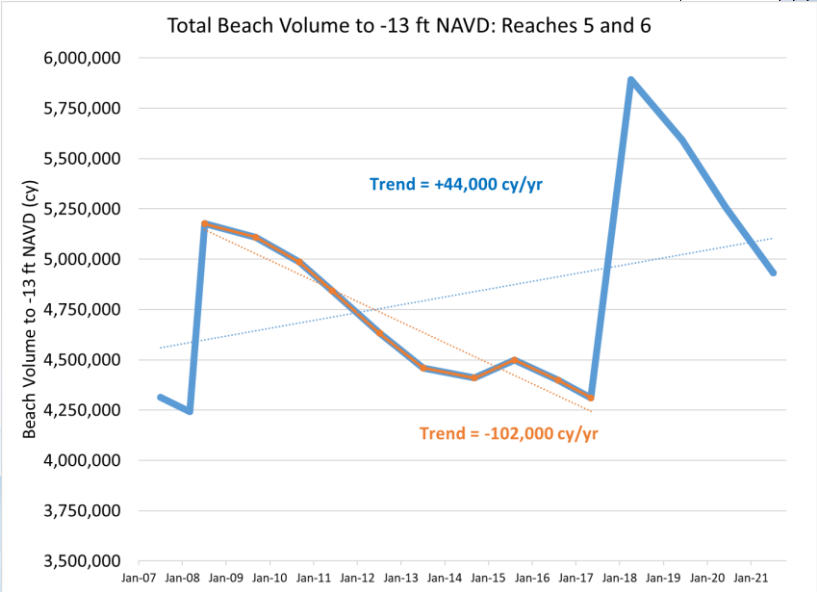
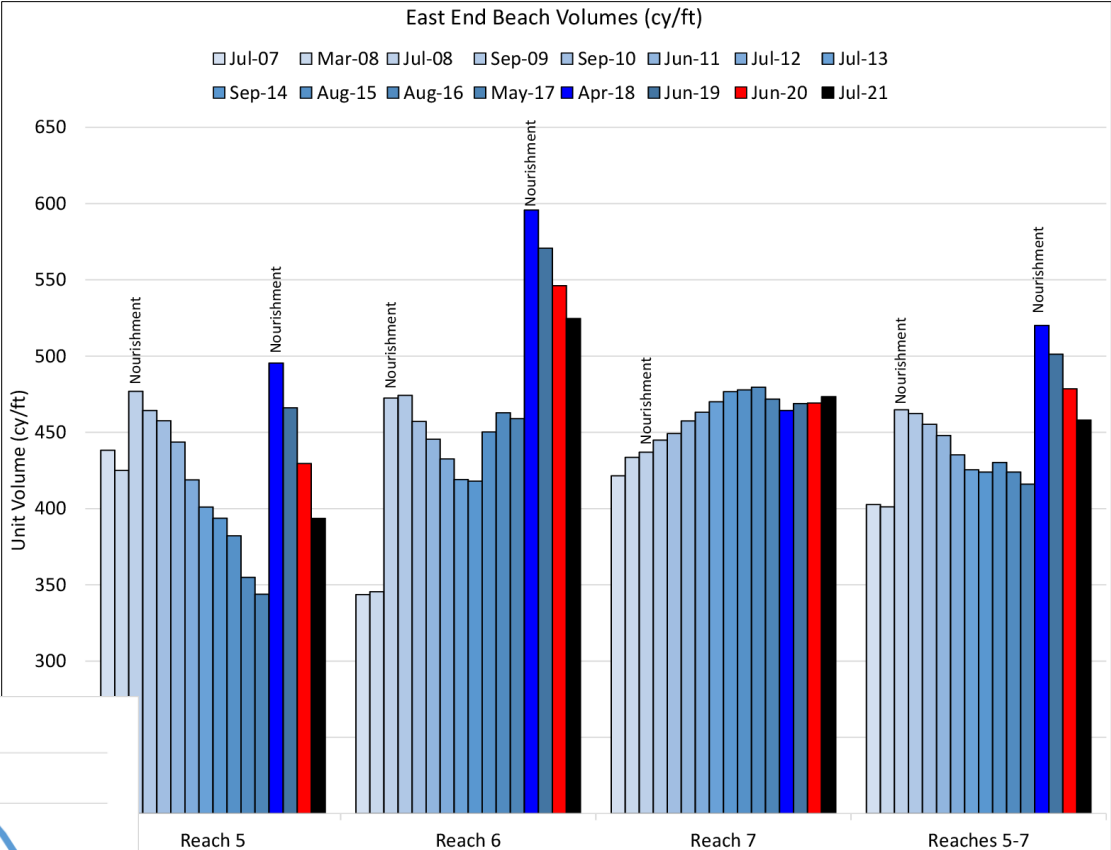
Erosion 2020-2021

- Most erosion occurred underwater
- Greatest volume loss in project area
- Beach Club Villas – Seagrove



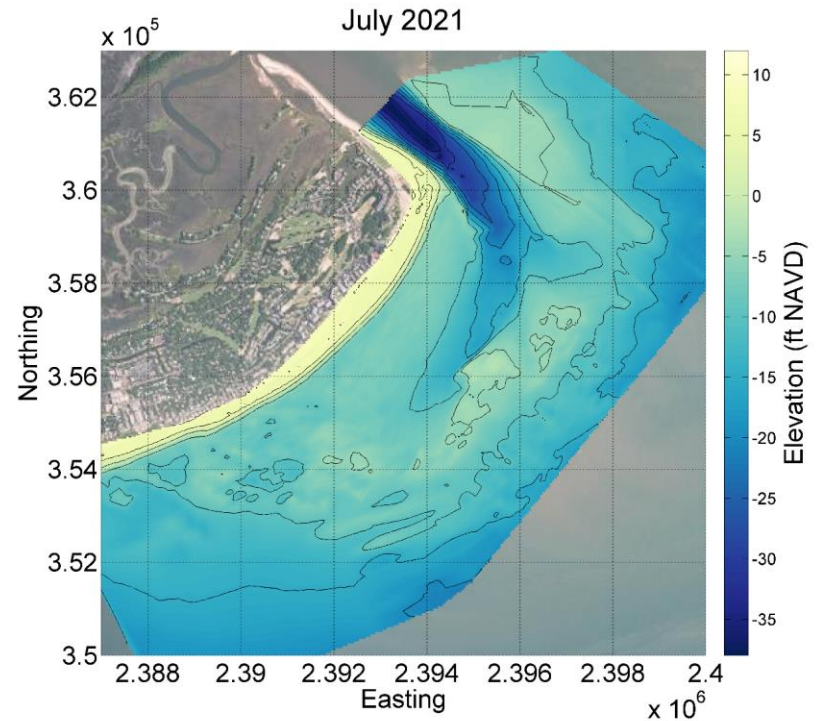
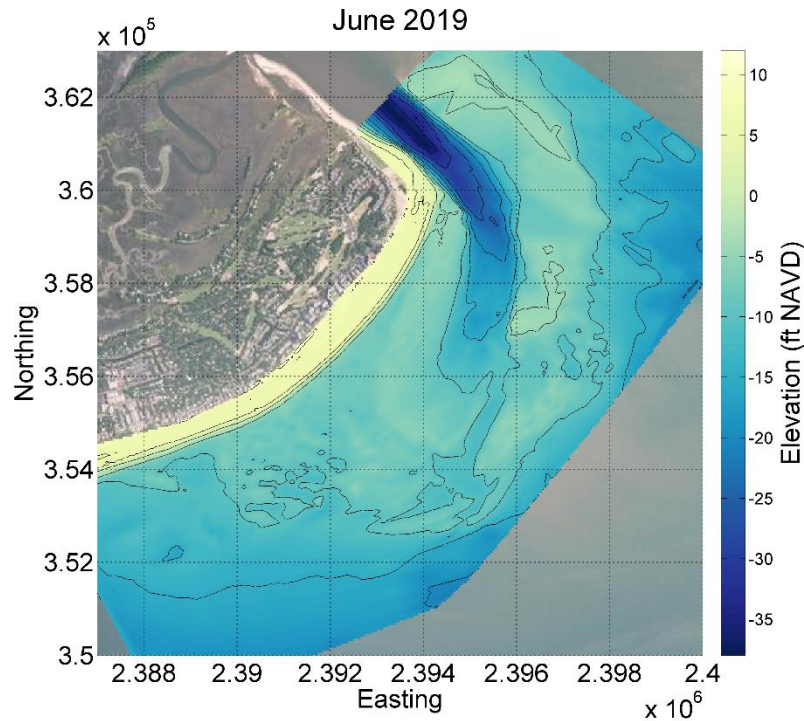
East End

- -321,600 cy (20.4 cy/ft) last year
- -960,000 cy since 2018 (61% of Fill)
- +620,000 since 2018



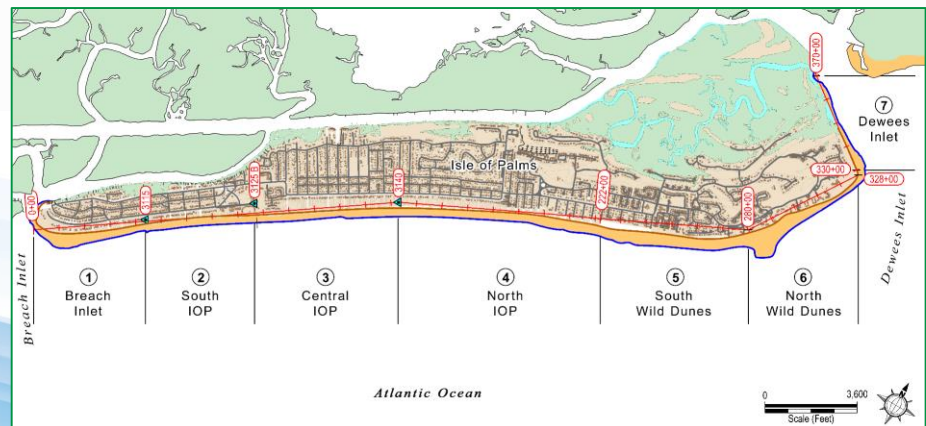
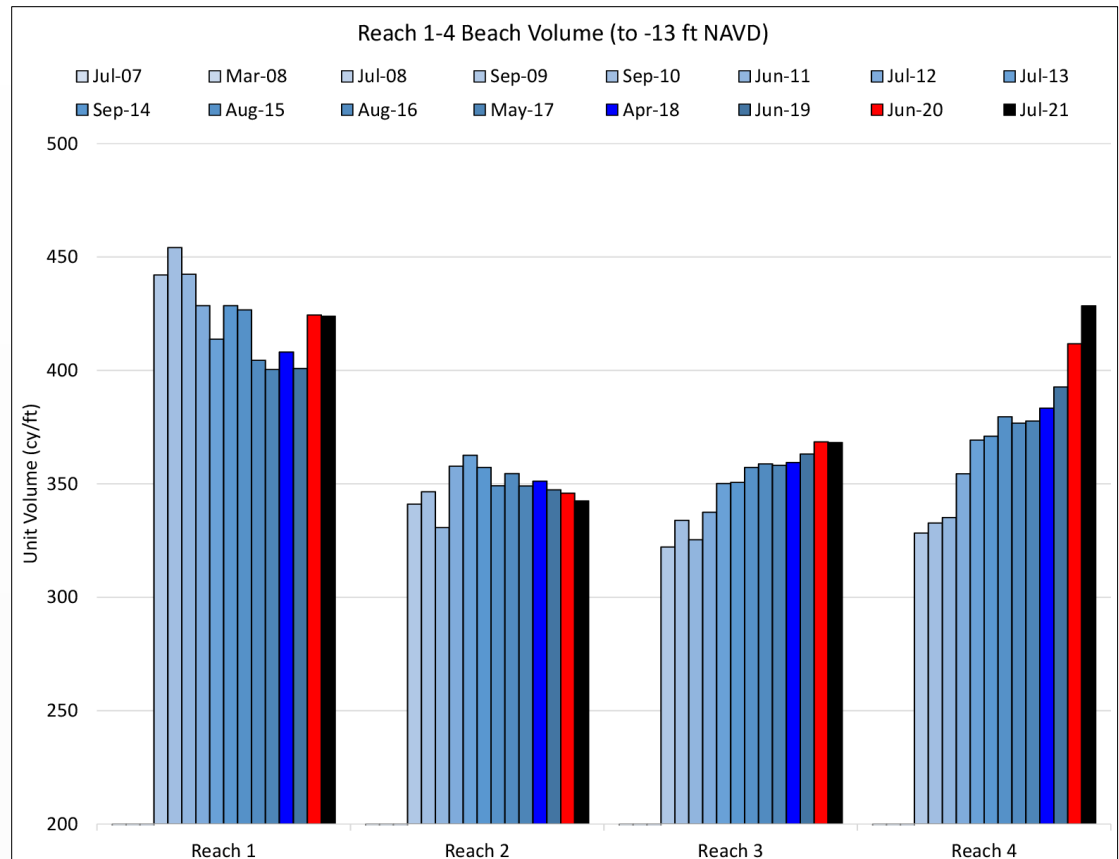
Isle of Palms
Delta Evolution
2007-2021

Shoal Development – Stage I Approaching

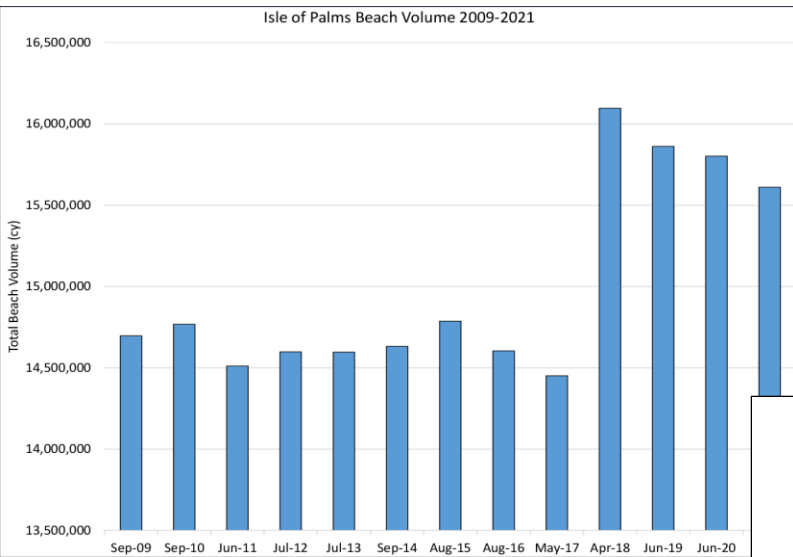


Downcoast Areas

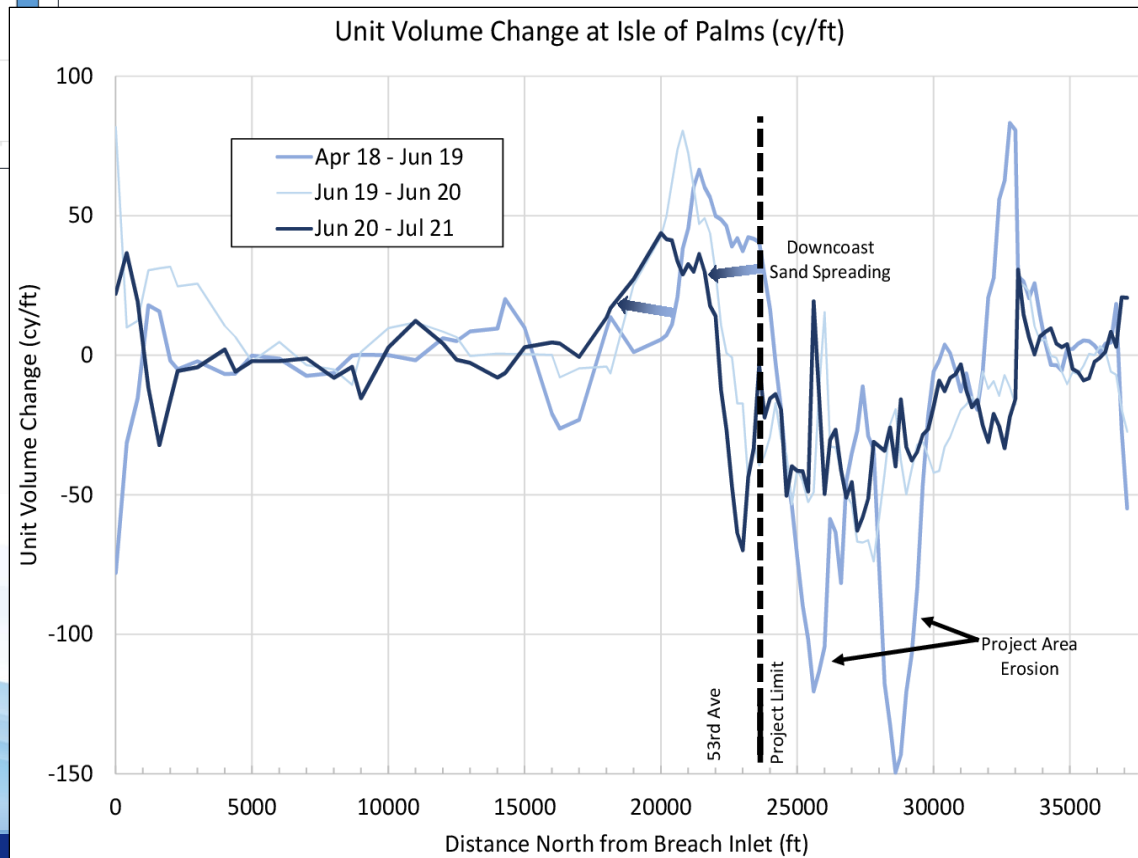
- Downcoast reaches gained 130,500 cy last year
- +438,600 cy since 2018



Beach Volume Change



- Total increase of 914,000 cy since 2009
- -191,200 cy (5.1 cy/ft) island wide last year

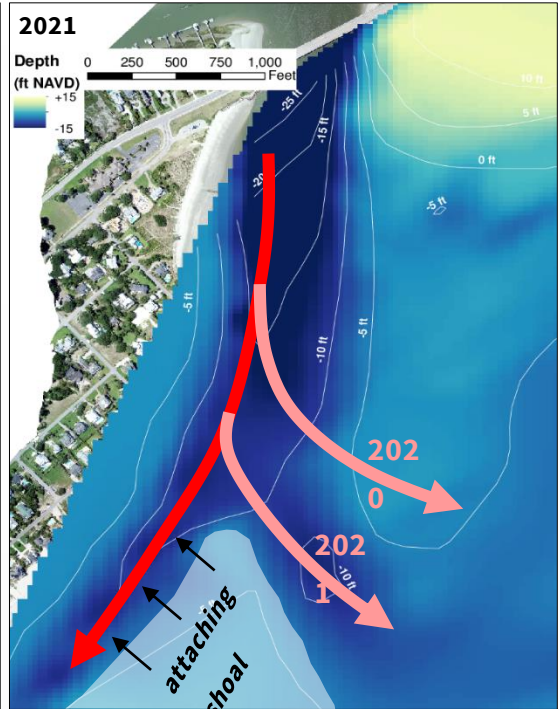


Front Beach

- Generally healthy, but lowest dune volume
- Impacted by episodic interruptions of upcoast sand supply
- Protected from modest storm, but not severe



Breach Inlet



Moving Forward

- Shoal-created erosion will affect east end in the future
- Emergency measures may be effective for short term, but additional sand is likely to be required
- State funding may be available for matching funds in public areas
 - Shovel-ready projects are priority
 - Permitting requires 1-2 years
 - Offshore sand sources need to be confirmed
 - SHPO coordination
- Front Beach/Breach Nourishment if necessary
 - Potential for beneficial use project with USACE

