

Maximizing the Long-Term Function of Coastal Islands Derived from EWN Efforts – Swan Island

PROBLEM

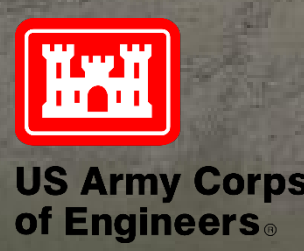
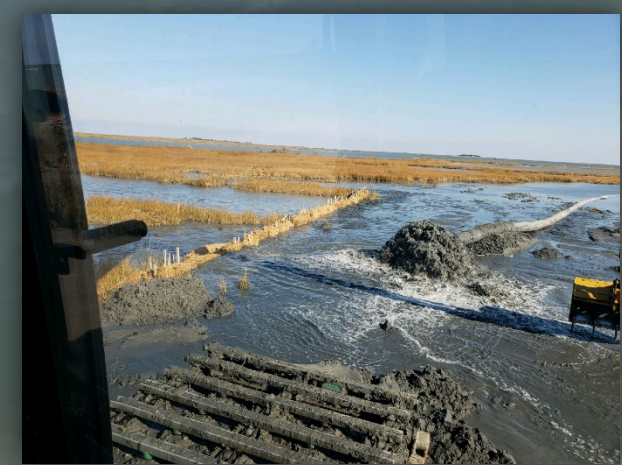
- There has been erosion of about 3 m/yr for Swan Island and Martin National Wildlife Refuge, since 1942 (similar for islands in the Chesapeake Bay).
- The Island was fragmented, SAV was dying, and its low marsh was at sub-optimal elevations.
- Social, environmental, and economic benefits provided by Coastal Islands quantification is deficient.

SOLUTION

- Utilize 55,000 CY of material from Baltimore District's maintenance dredging of the Big Thorofare federal navigation channel
- Beneficially use material to restore the island, and support high, and low marsh growth, as well as establish dune vegetation.
- Monitor vegetation and hydrodynamic data on and around the island pre- and post- restoration.

IMPACT

- Develop monitoring and adaptive management plan from collected data to inform future management of the Island, and others like it.
- Support the growth of the EWN initiative through a highly visible, largely collaborative effort on Coastal Island restoration and long-term management.



APPLICATIONS

- Transfer lessons learned through adaptive management plan, and numerous other publications.
- Support similar island creation projects throughout the EWN network, and work with researchers to share successful application and monitoring methods.

STATUS

- Large data-sets of hydrodynamic and vegetation conditions
- Virtual poster, and three conference presentations
- Three Tech Reports (two in draft form)
- Five Tech Notes (three in draft form)
- Two Journal Publications (one in draft form)
- Web page, and information video to support tech transfer

BENEFITS

- Support the Engineering Islands for Increased Coastal Resilience Effort ([Coastal Islands](#)).
- Provide risk reduction to surrounding islands (Smith Island), and support local ecological systems.
- Quantification of socio-economic, environmental, and resilience benefit will support the expansion of island building within risk-reduction infrastructure designs.

Providing Lessons Learned,
Quantification of Benefits, and
Collaborative Network Building,
To Expand the EWN Initiative

WHAT'S NEXT

Support the Coastal Island Building Network. Investigate annual data collected on and around Swan Island to quantify resilience benefit.