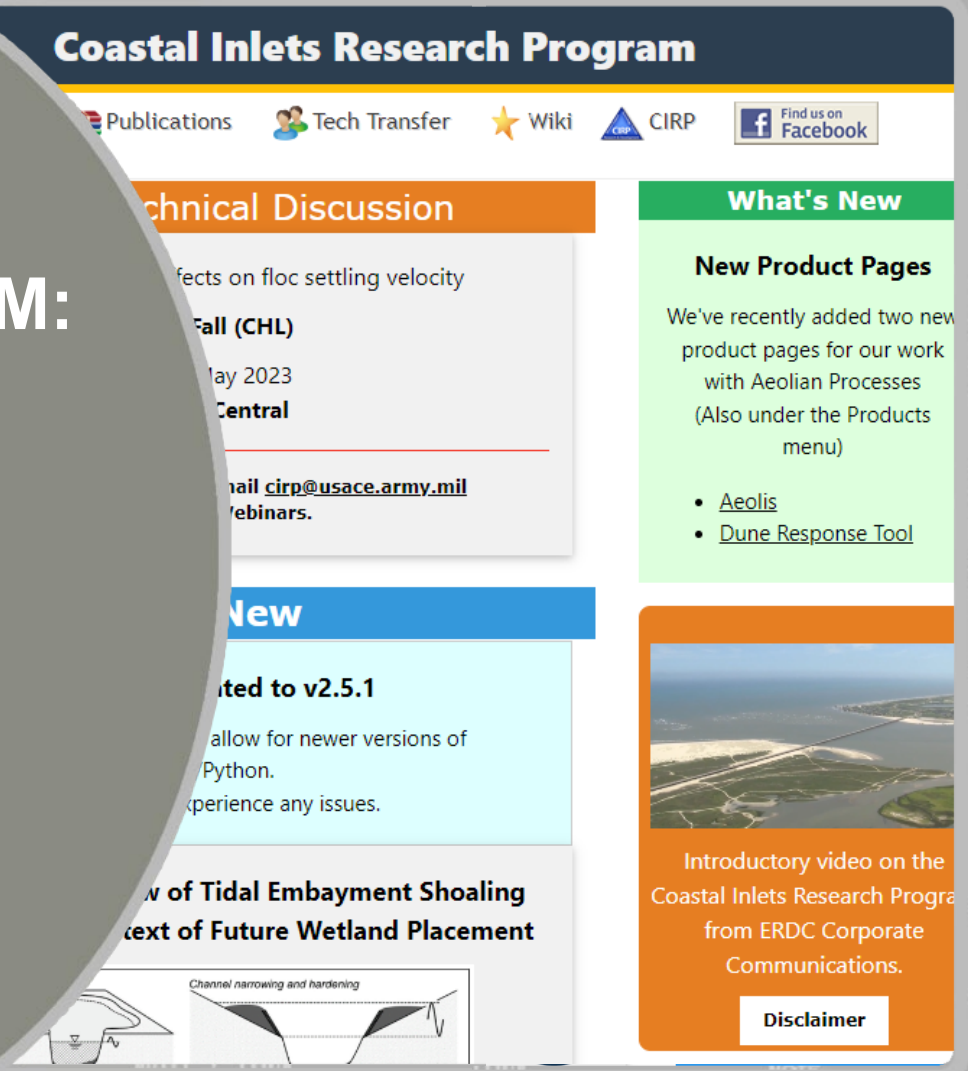
COASTAL INLETS RESEARCH PROGRAM:
PROGRAM MANAGEMENT WORK UNIT

Tanya M. Beck, CIRP Program Manager



COASTAL INLETS RESEARCH PROGRAM
FY22 IN PROGRESS REVIEW

Tiffany Burroughs
HQ Navigation Business Line Manager

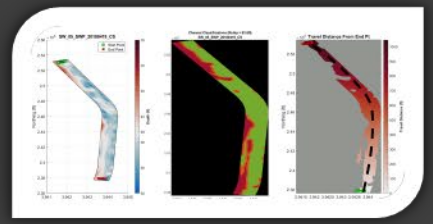
Eddie Wiggins
Technical Director, Navigation

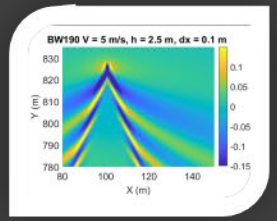
Brian McFall
Acting Associate Technical Director

US Army Corps of Engineers

CHL COASTAL & HYDRAULICS LABORATORY

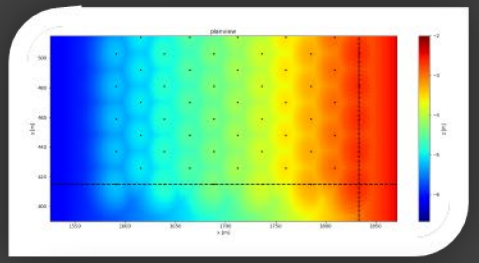
ERDC ENGINEER RESEARCH & DEVELOPMENT CENTER

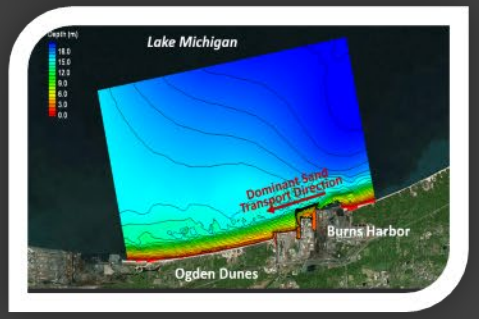




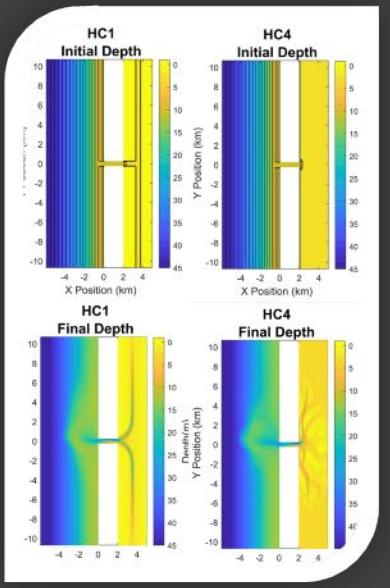
CIRP

Advancing knowledge and technology to better predict future channel shoaling.





Providing quantitative and practical predictive tools and data analytics to reduce the cost of dredging for Federal navigation projects and to maintain jetties.



Quantifying potential unintended consequences and identifying necessary mitigation.

Understanding future conditions for coastal navigation and providing engineering guidance.

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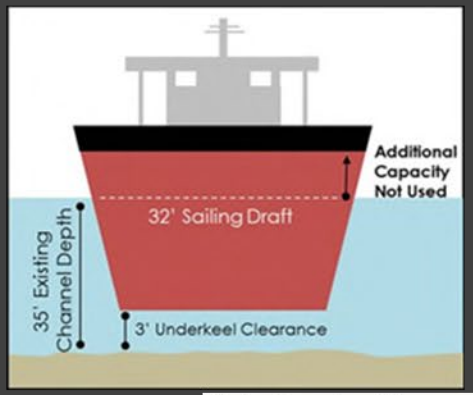
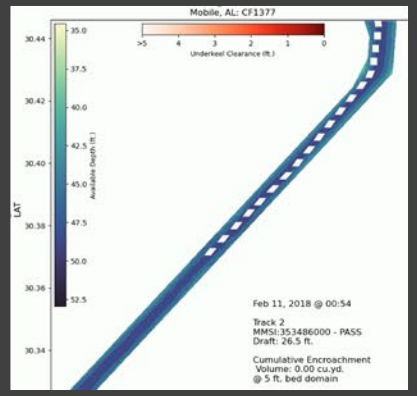
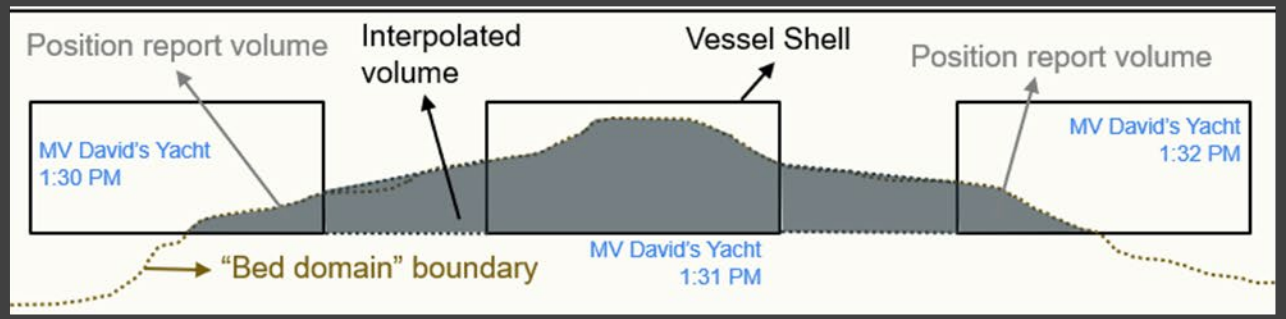
2022 CIRP In-Progress-Review (IPR)
19-20 April 2023

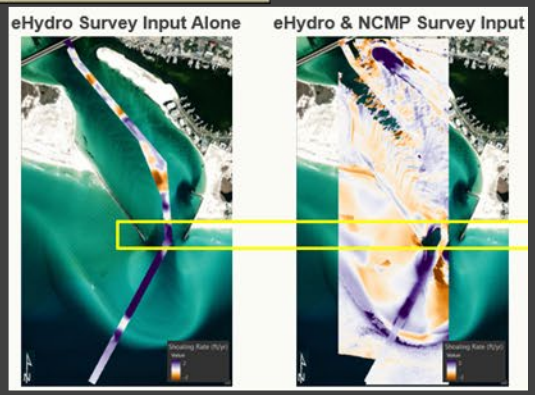
Wednesday, 19 April		
0815 - 0820	Welcome by Navigation TD	Eddie Wiggins
0820 - 0840	Opening Remarks and CIRP Program Status	Tanya Beck
Decision Support to Marine Transportation and Dredging Systems		
0840 - 0900	Portfolio-scale Vessel Analyses: Applications of Underkeel Clearance in Navigation Channels	David Young Brandan Scully
0900 - 0915	Channel Shoaling and Analysis Toolbox (CSAT) Advancements	Charlene Sylvester Michael Hartman
0915 - 0930	Discussion	
0930 - 0945	**BREAK**	

Coastal Navigation Portfolio Management









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2022 CIRP In-Progress-Review (IPR)
19-20 April 2023

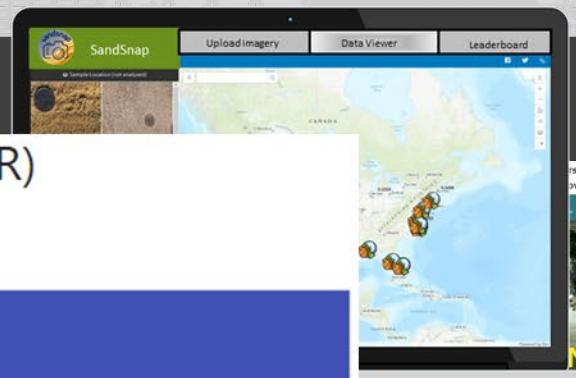
Wednesday, 19 April

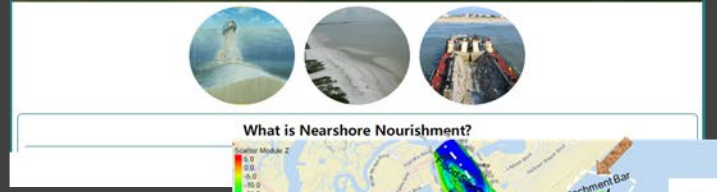
Tools to Support Natural and Nature-based Features

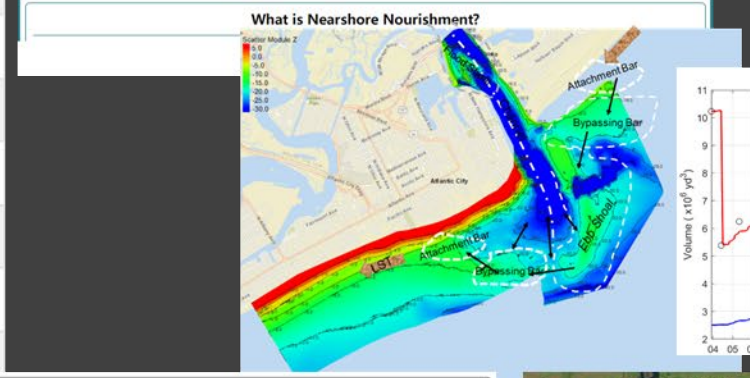
0945 - 1000	SandSnap: Digital Grain-size Imagery Analysis and Engaging Citizen Scientists	Brian McFall
1000 - 1015	Nearshore Nourishment Website	Douglas Krafft
1015 - 1030	Discussion	
1030 - 1045	**BREAK**	
1045 - 1100	GenCade Development Updates	Yan Ding
1100 - 1115	Impacts of Wetland Nourishment on Coastal Inlet Processes	Douglas Krafft
1115 - 1130	Discussion	
1130 - 1140	Wrap-Up Day 1	

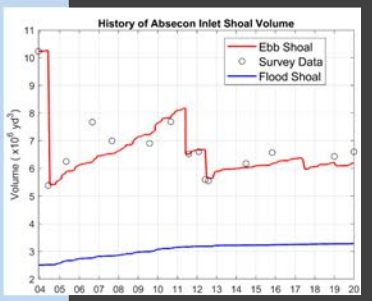
Inlet Geomorphic Evolution

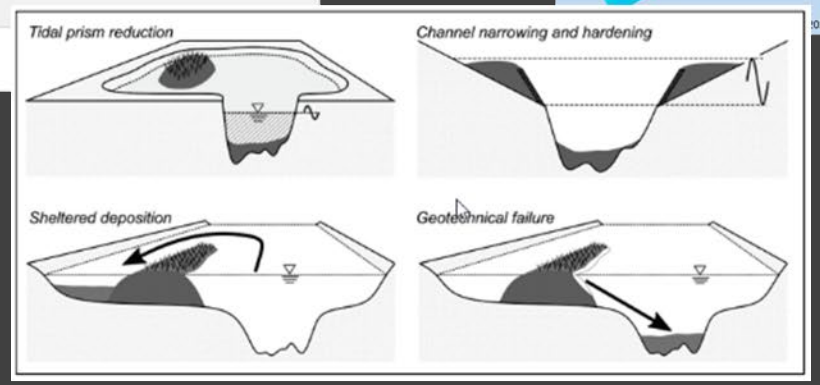
Inlet Engineering Tools

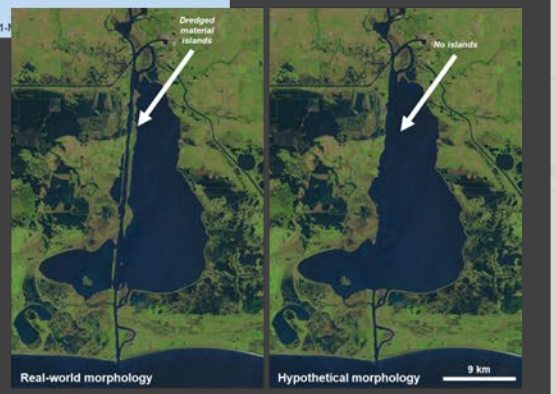


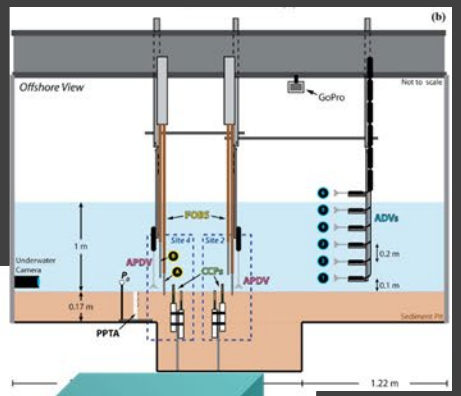












2022 CIRP In-Progress-Review (IPR)
19-20 April 2023

Thursday, 20 April

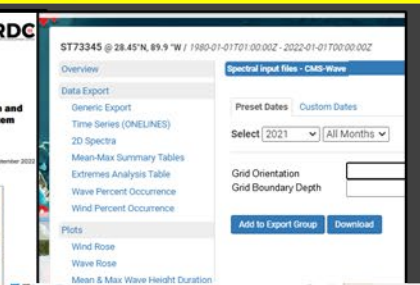
Nearshore Processes and Coastal Sediment Transport Model Advancement

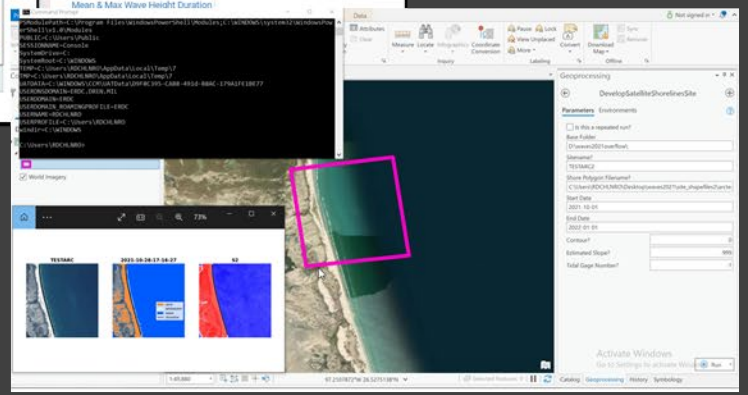
0830 - 0845	Advancements in Nearshore Processes: Final Year	Brad Johnson
0845 - 0900	CMS/C2Shore Model Development and Validation	Liz Holzenthal
0900 - 0915	Tools for Simulating Aeolian Sediment Transport and Coastal Foredune Evolution, Dune Response Tool, and Aeolis 1d/2d Development	Nick Cohn
0915 - 0930	Discussion	
0930 - 0945	**BREAK**	
0945 - 1000	Management of CMS Development, Tech Transfer, and Guidance	Mitch Brown
1000 - 1015	Development of a Satellite-Based District Tool for Quantifying Coastal Evolution and Project Performance at Beaches and Inlets	Ian Conery
1015 - 1030	Discussion	
1030 - 1045	**BREAK**	

Coastal Modeling System

Inlet Engineering Tools

	Runtime	RMSE (m)	NRMSE (-)
Stockdon	0.18 s	1.01	0.89
CSHORE	25.0 s	0.55	0.34
CMS	4.1 min	0.29	0.13
XB-SB	35.5 hr	0.53	0.30
XB-NH	124.4 hr	0.45	0.23





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2022 CIRP In-Progress-Review (IPR)
19-20 April 2023

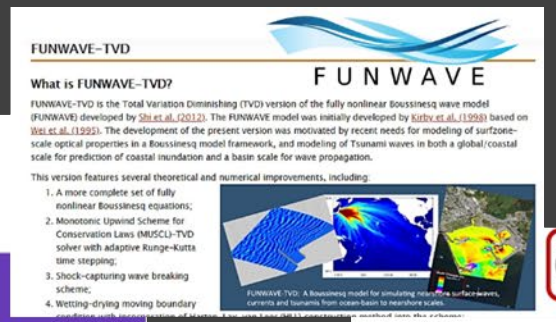
New Starts

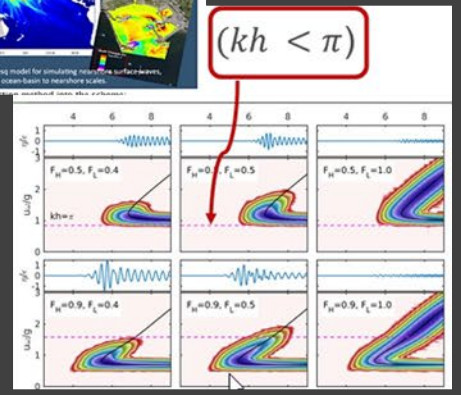
Inlet Engineering Tools

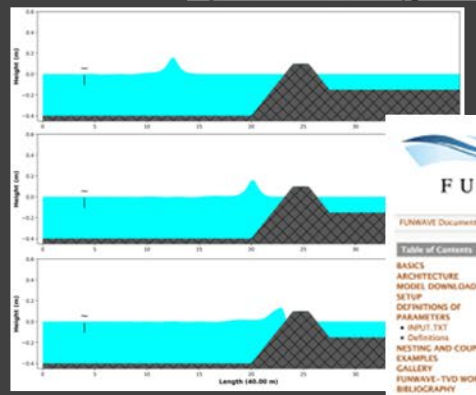
Thursday, 20 April

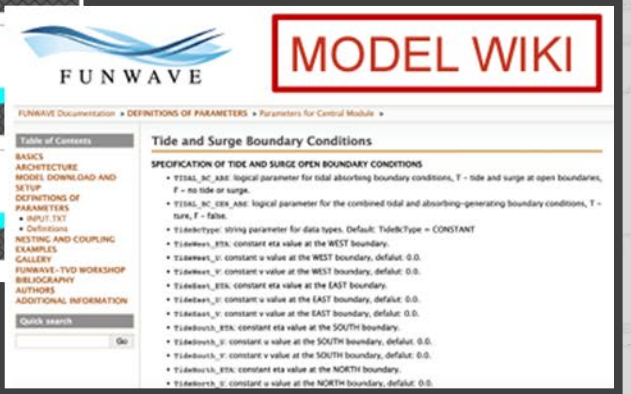
Port and Nearshore Phase-resolved Wave Modeling

1045 - 1100	FUNWAVE-TVD Model Improvements Development	Michael Lam
1100 - 1115	Practical wave response guidance over emergent and submerged coastal structures using FUNWAVE-TVD	Marissa Torres
1115 - 1130	Discussion	
1130 - 1140	Wrap-Up Day 2 / Closing Remarks	Eddie Wiggins



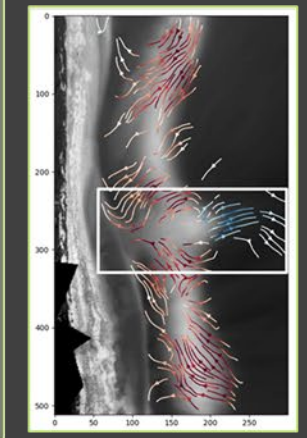


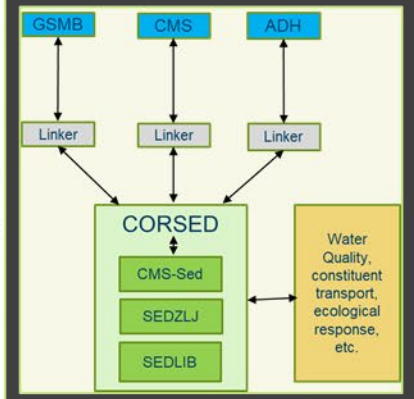




Missing from IPR:

- Optical Currents (CIRP/CODS) FY20-FY21
- CORSED (RSM/DOER/CIRP) FY18-FY22





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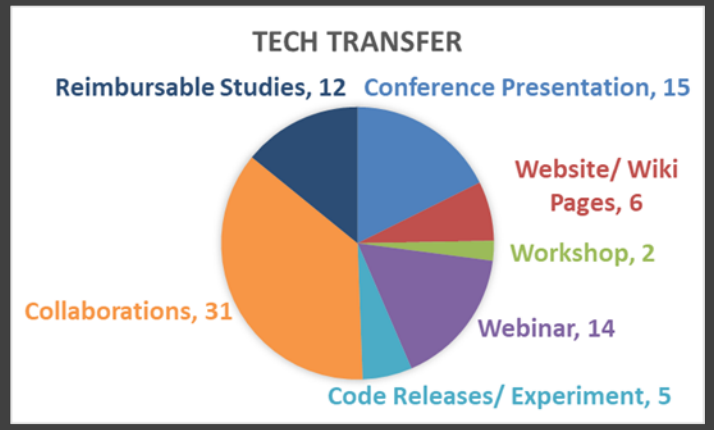
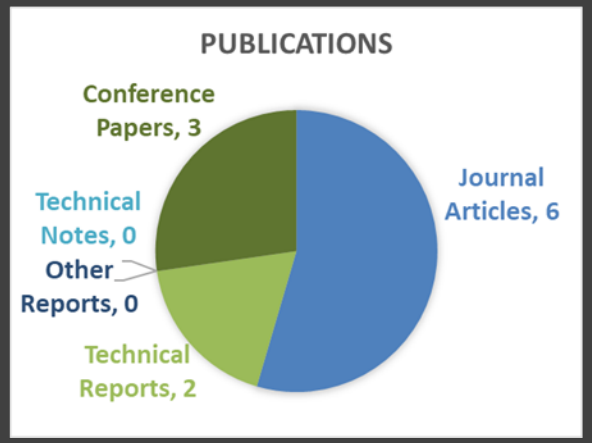
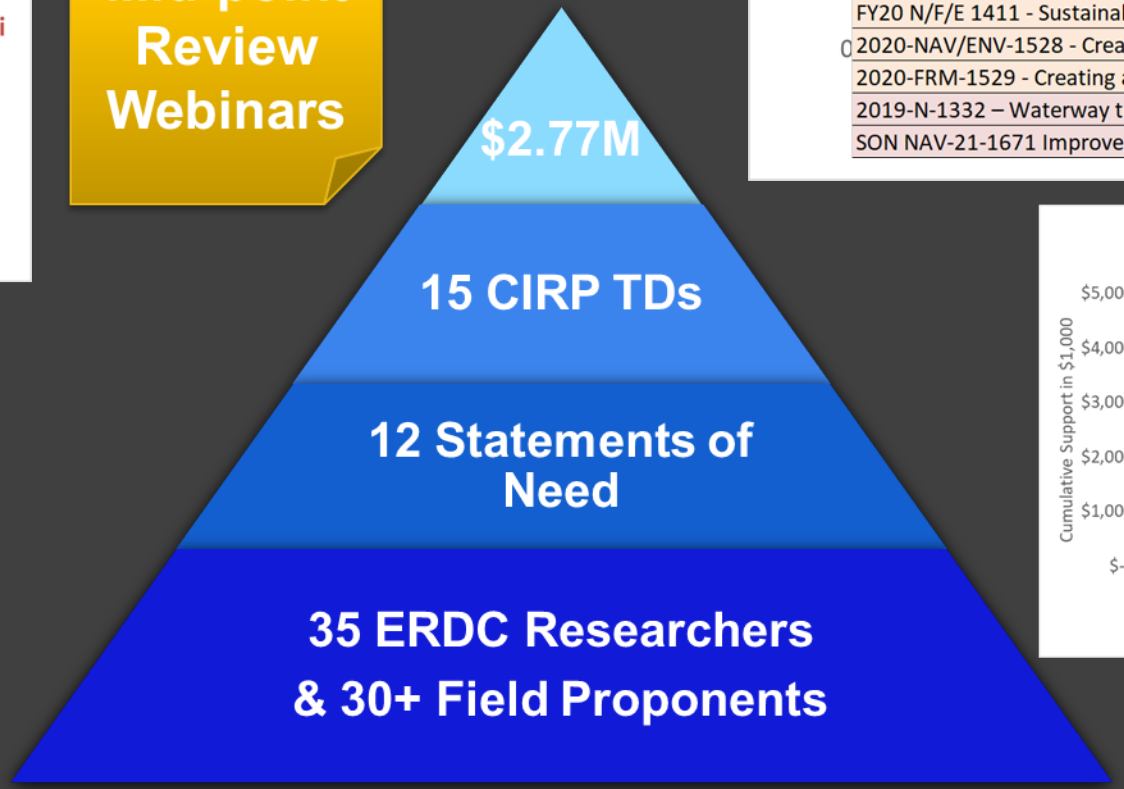
FY22 Program Metrics

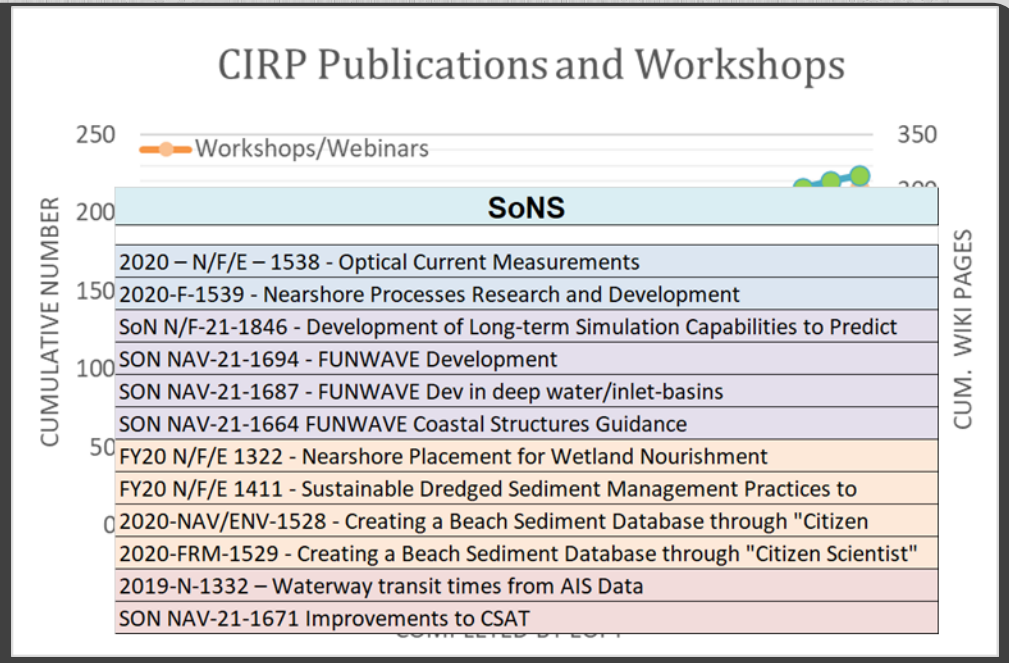
CIRP

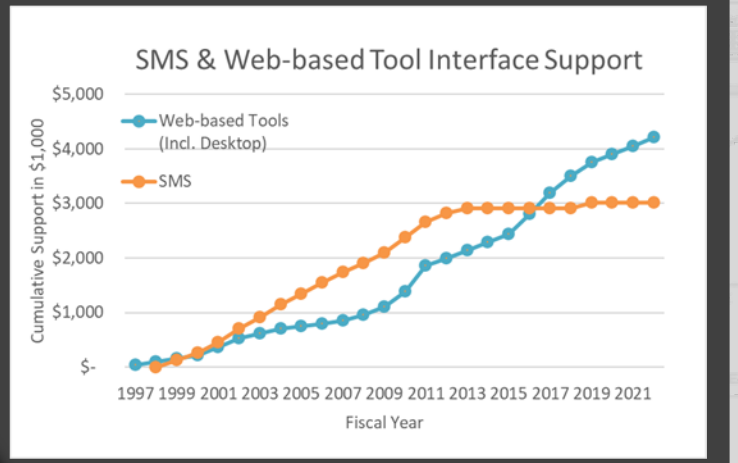




Mid-point Review Webinars







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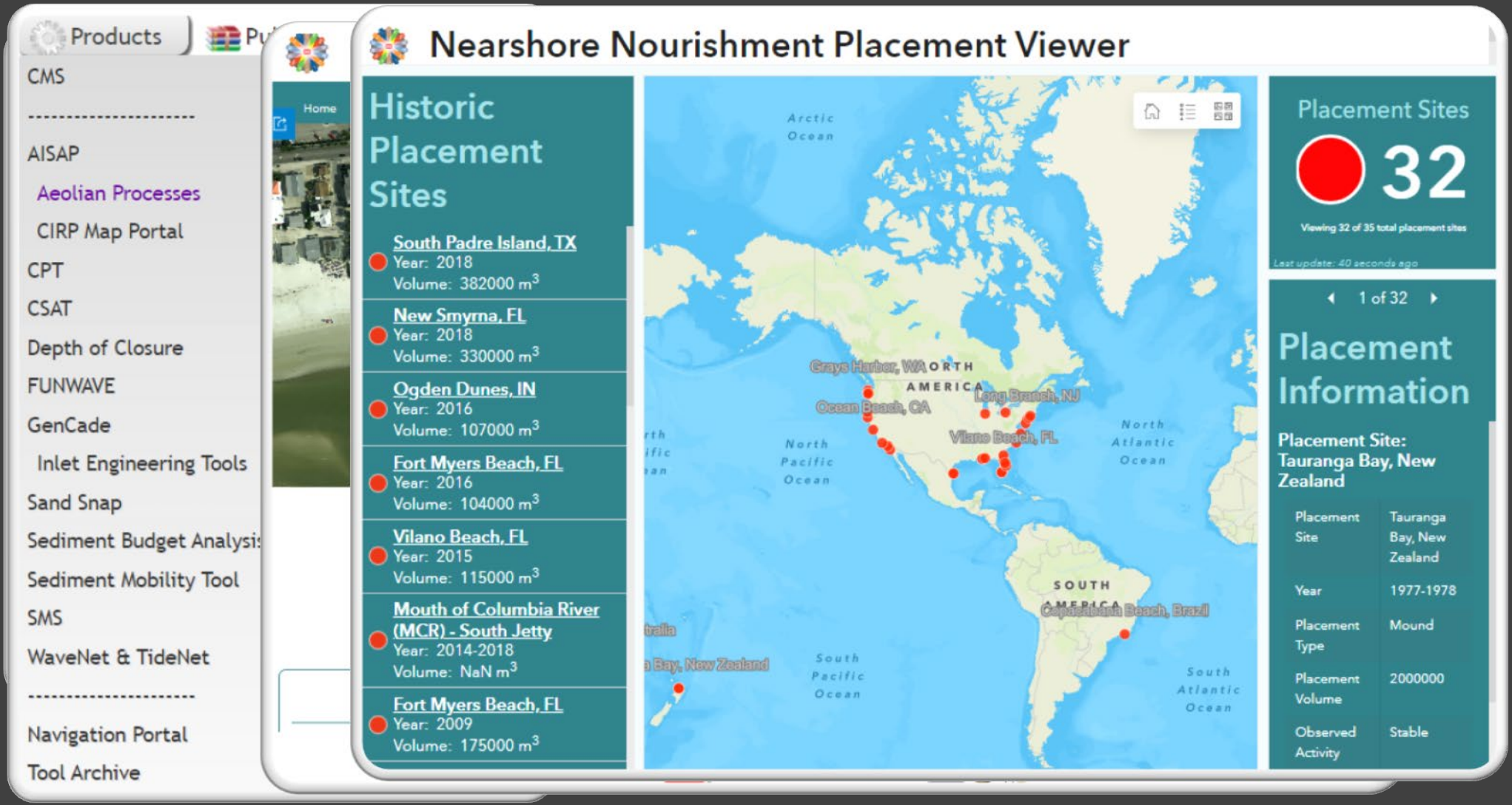
Communicating Technology Transfer Activity



Website: https://cirp.usace.army.mil/

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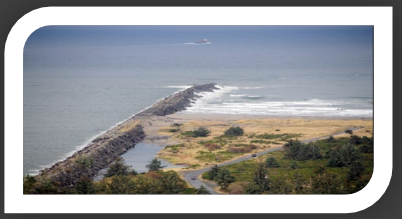
Looking ahead

FY23

- New Start Coastal Inlet Resilience Project with 3D geomorphic analyses in GIS
- CMS Major Version Release with swash & sandbar closure (C2Shore), and subaerial sand transport (Aeolis)
- FUNWAVE-TVD model development for deep water waves and guidance over emergent and submerged coastal structures
- New CSAT Guidance on basic and advanced features
- Transition CoastSat to USACE for rapid shoreline change analyses
- Transition CNPM methodologies to NavPortal and technology to open-source ERDC GIT Repositories (numerical models & tools)
- CIRP Tech Discussion webinars and support internal and external workshops at all levels (Engineer, MSCs, Conf.)
- Mentoring and growing CIRP teams



2023 NAV SoNs

NAV
1970 - Multi-scale analyses of BUDM impacts on long-term navigation channel maintenance
To include BU alternatives: 1906 – Nearshore Berms/1921 – Eel Grass Habitat/1933 – Wetland Creation
1923 - Improving Prediction and O&M Strategies
1968 - New volume-change tools to improve sediment management
1969 - Incorporating shoaling rates into sediment budget creation to improve sediment management
1987 - Hindcasting Coastal Rubble Mound Reliability

CIRP