

Engineering With Nature Project Fact Sheet



Comprehensive Framework for Incorporating Remote-Sensing Methodologies into Engineering With Nature Design and Application

Background

There is an increasing opportunity and number of EWN® projects seeking support to use remotely sensed data and geospatial methodologies to help quantify environmental benefits. Currently, there is no comprehensive approach to using remote-sensing (RS) technology in the EWN® project portfolio, often resulting in an ad hoc or reactive approach late in a project's life. Yet, innovative RS technologies continue to rapidly evolve, and their proactive use throughout a project life cycle can assist to optimize planning, design, construction, and monitoring.

Objectives

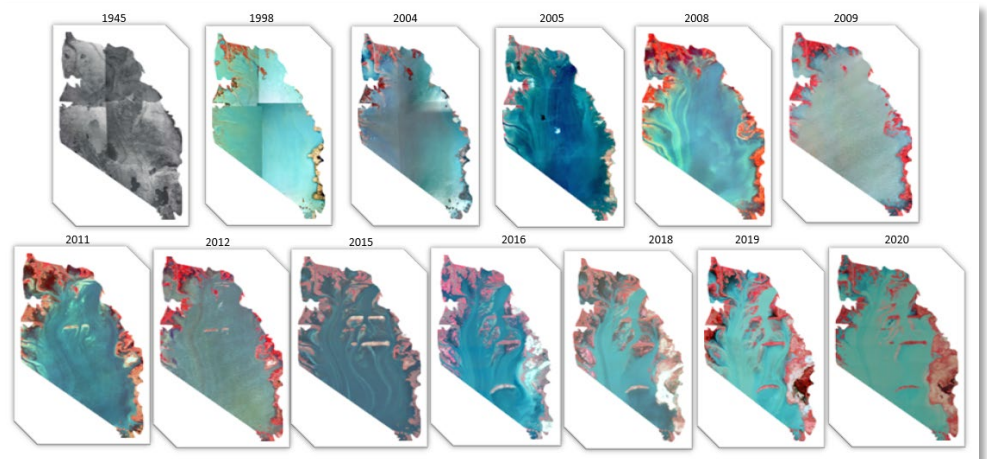
This research aims to develop a comprehensive protocol standardizing RS approaches for the EWN® portfolio. More specifically, incorporating a more comprehensive RS approach fits with the expansion of capabilities, applications, and communication outlined in the *EWN® Strategic Plan 2018–2023: Expanding Implementation*, whereby RS data and methods can assist with (1) documenting and communicating EWN® project design and implementation, (2) sharing information regarding project performance and value creation, and (3) demonstrating applications of EWN®.

Approach

- Build upon previous and current research to identify and derive environmental, geomorphological, and landscape metrics from RS data for use in EWN® projects.
- Utilize EWN® project case studies and readily available or newly collected RS data to evaluate and document repeatable geospatial processing methods for metric development.
- Develop geospatial tools for use with ACE-IT-approved software, collating evaluated methods into software-based workflows to streamline the production of spatially explicit metric data products.
- Document the application of RS data, methods, and geospatial software tools in EWN® project case studies, which will serve as guidance and best practices for the EWN® practitioner community.

Outcomes

An improved understanding of remote sensing platforms, sensors, and value-added data products in the EWN® project portfolio will assist project practitioners to align appropriate RS data and methods with specific project needs. This will provide options for rapid biological and structural assessment to quantify EWN® project performance. Thus, RS approaches will be instrumental in illustrating and quantifying critical EWN® concepts, such as habitat developed as a result of strategically placed dredge material.



West Bay, Louisiana Sediment Diversion, 1945–2020

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