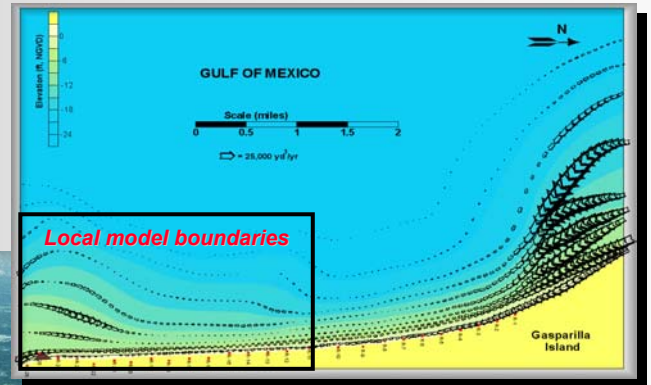


**NLINE BEACH EVOLUTION MODELING**

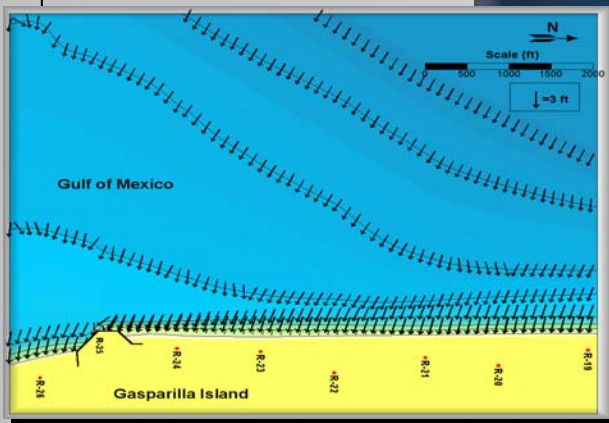
The NLINE model was used to simulate the existing conditions and evaluate various design alternatives for the Gasparilla Island project. The model provided time-dependent simulations of wave transformation, sediment transport, and the 3D beach changes for various temporal and spatial scales. The practical computer run-time provided efficient model calibration and verification rendering a high level of confidence in the model predictive capability.

• **REGIONAL MODELING**

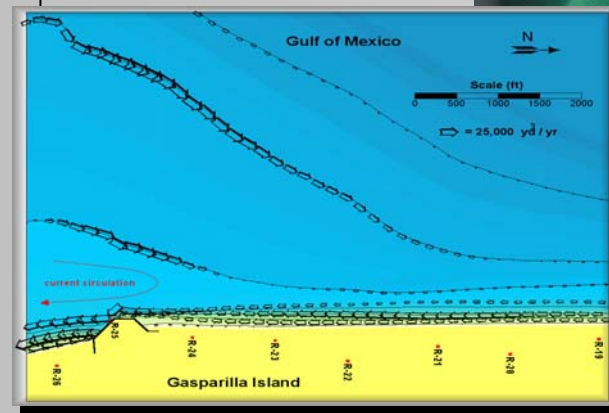


Calculated sediment transport patterns along the entire Gasparilla Island coast

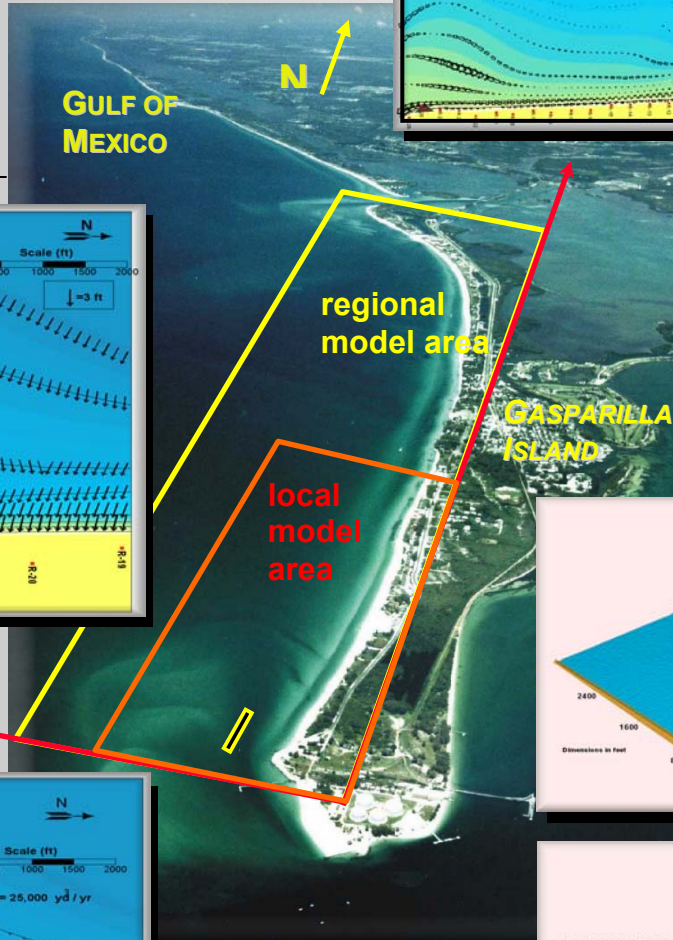
• **LOCAL MODELING**



Sample wave transformation results

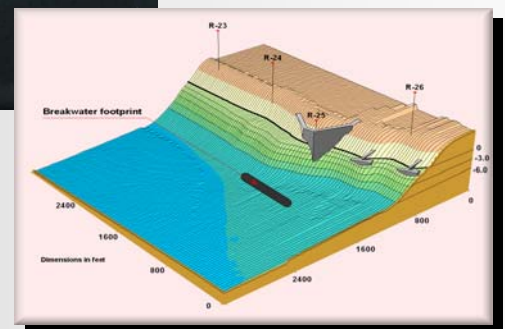
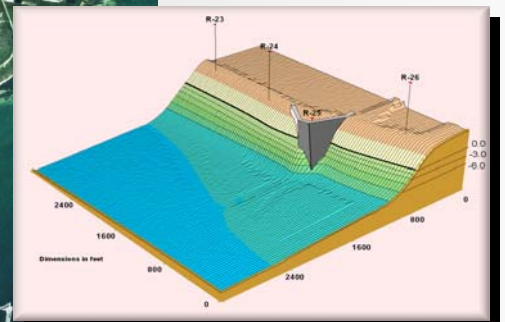


Calculated sediment transport patterns



General layout of the modeling areas and local coordinates

• **DESIGN OPTIMIZATION MODELING**



3-D morphology changes for different design alternatives

**TECHNICAL REFERENCE**

Dabees and Kamphuis (2000) "NLINE, Efficient Modeling of 3D Beach Change" Proceedings, ASCE, 27<sup>th</sup> International Conference on Coastal Engineering, Sydney, Australia.