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# Murrells Inlet Beneficial Use of Dredged Material



from **Engineering With Nature: An Atlas, Volume 1.**

by **US Army Engineer Research and Development Center**



## Murrells Inlet, South Carolina, United States

The Murrells Inlet Navigation Dredging Project, completed in 2017 by the U.S. Army Corps of Engineers Charleston District, is an excellent example of Engineering With Nature. The project was initiated to return the federal channel and the smaller A, B, C, and D channels to the authorized depth to allow boats of various sizes to enter and exit the inlet. Dredged material from the entrance channel, the deposition basin, and two inner channels was used beneficially after placement on the front beaches of Garden City Beach; the effort raised the beach elevation by 9 feet, making the beach a protective buffer for the infrastructure behind it. Material was also placed in Huntington Beach State Park at the terminus of the southern jetty. This project created numerous engineering and environmental benefits, including a reduced need for local beach nourishment, increased habitat for a variety of bird species, and erosion control. This effort will also help mitigate impacts from any future storms and reduce future maintenance costs for the federal government.

Article cover: Looking west at the jetty tiein. (Photo by USACE Charleston District)

## Producing Efficiencies

In response to the requirement of maintaining federal navigation channels, the design of the Murrells Inlet Navigation Dredging Project includes strategic placement of dredged material from the entrance channel and two inner channels. Dredged material is placed at the terminus of the southern jetty to address erosion concerns of the jetty while also creating foraging and nesting habitat for a variety of bird species. The dredged material is also placed along the nearby front beaches to provide nourishment. These areas are nearby to the channels being dredged; therefore, they are least-cost placement area options.

## Using Natural Processes

The design of this project uses natural processes to maximum benefit by strategically placing dredged material to address erosion concerns; as a result, foraging habitat is created for endangered shore birds and nesting habitat is created for colonial-nesting waterbirds. The dredged material is also used as beach nourishment for local beaches north and south of the entrance channel.



Looking northwest (inland) from near the base of the jetty.

## Broadening Benefits

Beneficially placing dredged material behind the south jetty resulted in the creation of foraging habitat for endangered shore birds and nesting habitat for colonial-nesting waterbirds. The material also provided erosion protection for the south jetty and offered cost savings due to the close proximity of the placement area to the navigation channel. Placement of material along the front beach of adjacent areas helped reduce the need for beach nourishment by the local community.



Garden City Beach before placement of dredged material (looking south).  
(Photo by USACE Charleston District)

## Promoting Collaboration

Before material was placed adjacent to the south jetty within Huntington Beach State Park, the project team consulted with state and federal environmental agencies for their opinions on the proposed placement. The project was strongly supported by Huntington Beach State Park, which monitors birds on the placement area, and by the U.S. Fish and Wildlife



Service, which supported the creation of foraging habitat for the endangered piping plover.



Garden City Beach after placement of dredged material (looking south).

(Photo by USACE Charleston District)



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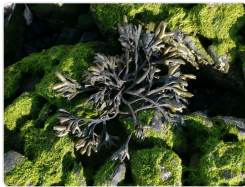
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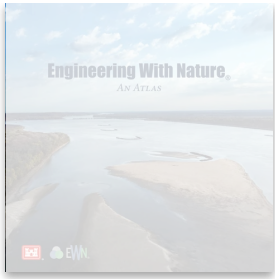


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