

Nursery Habitats and Multispecies Reef Fisheries of Southeast Florida: Cross-shelf Effects of Beach Dredge and Fill Projects

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Over 100 acres of nearshore reefs are currently proposed for burial by several beach dredge and fill projects in east Florida. Over 515 species of invertebrates, algae, and fishes are recorded from nearshore hardbottom areas buried by these projects. Hardbottom and worm reefs are the only natural structures in shallow marine waters north of Government Cut, Miami, and have nursery value for at least 30 species of fishes and many invertebrate prey species. Over 50×10^6 yd³ of sediments have already been dredged near offshore reefs and dumped along a 140 mile corridor in southeast Florida in the last 35 years. At least 80×10^6 yd³ of additional sediments are proposed for dredging within the same corridor in the next 50 yr; not including inlet maintenance dredging. Many impact assessments (EAs and EISs) have concluded that both short- and long-term impacts of beach renourishment dredging are negligible. Such assessments are questionable for diverse reasons, some of which include: 1) the cumulative impact sections have rarely considered the effects of past, future or nearby projects on recruitment, declines in primary production from chronically elevated turbidity, or a variety of other logical biological effects; 2) statistically valid field monitoring of project impacts is not required and rarely done; 3) euphemistic predictions from past documents reappear in new documents in the absence of supporting data, while evidence for the degradation of coastal east Florida habitats and fish populations accumulates; and 4) synergistic effects resulting from the interaction of sub-lethal and lethal impacts over short- and long-term temporal scales remain unconsidered for any one species, much less a key subset of species from the cross-shelf ecosystem. As all of the differing reef habitats affected by these projects are designated as Essential Fish Habitat - Habitat Areas of Particular Concern under the federal Sustainable Fisheries Act, there is additional rationale to initiate more detailed evaluations of both short-term and cumulative effects of semi-continuous beach dredge and fill projects.