Estuarine & Marine Habitats
Climate-related, decadal-scale assemblage changes of seagrass-associated fishes in the northern Gulf of Mexico

F. JOEL FODRIE†, KENNETH L. HECK, JR†, SEAN P. POWERS†, WILLIAM M. GRAHAM† and KELLY L. ROBINSON†

*Department of Marine Sciences, University of South Alabama, Mobile AL 36688, USA, †Dauphin Island Sea Lab, Dauphin Island, AL 36528, USA

Fig. 2 Northern range limits (mean ± 1SE), as reported by http://www.fishbase.org, of fishes within northern Gulf of Mexico seagrass meadows collected only by Livingston (1985) or only during our 2006-2007 surveys, denoted as species lost and species gained, respectively.
Crowded Coastal Ecosystems

Photo credits: NOAA, National Geographic (J. Cinner), U. Maryland, Mobile Port Authority
Graph from Douglass & Pickel (1999)

Mobile Bay, Alabama
Human Societies and Coastlines

127,000,000
Americans residing near coastlines

88%
Coastal managers cite erosion as greatest hazard

$530,000,000
Projected yearly cost of erosion in U.S.

1 in 4
Homes within 500 ft. of coastlines lost in next 60 yrs.

Source: NOAA Ocean and Coastal Resource Management
Enhancing fish through living shorelines
Living Shorelines

- Water Filtration
- Complex Structure
- Wave Attenuation
- Sediment Deposition
- Hard Substrate for Oyster Settlement
- Facilitation Of other Habitats

Increased Water Quality
Fisheries Enhancement
Coastal Protection

*Modified Press-Register Graphic*
Monitoring Submerged habitats
1971 (pink) on 1995 (blue) Oyster Reef Surveys

- Heron Bay
- Cedar Point
- Half Moon
- Kings Bayou
- Buoys Reef
- Sand Reef
- Dauphin Island Bay