Chapter 6: Habitats - Tidal Flat

Status
Current condition: Poor and declining. According to the best available GIS information at this time (see Appendix C: GIS Data Tables), 442,500 acres (179,073 ha) of Tidal Flat habitat exist, of which 71% (316,000 ac; 127,881 ha) are protected in reserves and easements. Another 14% (60,000 ac; 24,281 ha) are proposed for acquisition. The remaining 15% (66,500 ac; 26,912 ha) are other private lands.

Habitat Description

FNAI type: None

Tidal flats are non-vegetated areas of sand or mud protected from wave action and composed primarily of mud transported by tidal channels. An important characteristic of the tidal flat environment is its alternating tidal cycle of submergence and exposure to the atmosphere.

Associated Species of Greatest Conservation Need

Mammals
- *Lontra canadensis lataxina* River Otter
- *Neovison vison halliminetes* Gulf Salt Marsh Mink
- *Neovison vison lutensis* Atlantic Salt Marsh Mink
- *Neovison vison ssp.* Mink
- *Procyon lotor auspicus* Key Vaca Raccoon
- *Procyon lotor incaus* Key West Raccoon
- *Procyon lotor inesperatus* Matecumbe Key Raccoon
- *Trichechus manatus latirostris* West Indian Manatee

Some habitat distributions or locations may be misrepresented on this map due to size, resolution and insufficient data sources.
## Birds

- **Anas fulvigula** Mottled Duck
- **Pelecanus occidentalis** Brown Pelican
- **Ardea herodias** Great Blue Heron
- **Ardea herodias occidentalis** Great White Heron
- **Ardea alba** Great Egret
- **Egretta thula** Snowy Egret
- **Egretta tricolor** Tricolored Heron
- **Egretta rufescens** Reddish Egret
- **Nycticorax nycticorax** Black-crowned Night-Heron
- **Nyctanassa violacea** Yellow-crowned Night-Heron
- **Platalea ajaja** Roseate Spoonbill
- **Haliaeetus leucocephalus** Bald Eagle
- **Falco columbarius** Merlin
- **Falco peregrinus** Peregrine Falcon
- **Pluvialis squatarola** Black-bellied Plover
- **Pluvialis dominica** American Golden-Plover
- **Charadrius nivosus** Snowy Plover
- **Charadrius wilsonia** Wilson’s Plover
- **Charadrius melodus** Piping Plover
- **Haematopus palliatus** American Oystercatcher
- **Tringa semipalmata semipalmata** Eastern Willet
- **Tringa semipalmata inornata** Western Willet
- **Tringa flavipes** Lesser Yellowlegs
- **Numenius phaeopus** Whimbrel
- **Numenius americanus** Long-billed Curlew
- **Limosa fedoa** Marbled Godwit
- ** Arenaria interpres ** Ruddy Turnstone
- ** Calidris canutus** Red Knot
- ** Calidris canutus rufa** Red Knot (rufa)
- ** Calidris pusilla** Semipalmated Sandpiper
- ** Calidris mauri** Western Sandpiper
- ** Calidris fascicollis** White-rumped Sandpiper
- ** Calidris alpina** Dunlin
- ** Calidris himantopus** Stilt Sandpiper
- ** Limnodromus griseus** Short-billed Dowitcher
- ** Limnodromus scolopaceus** Long-billed Dowitcher
- ** Phalaropus tricolor** Wilson’s Phalarope
- ** Chlidonias niger** Black Tern

## Reptiles

- **Crocodylus acutus** American Crocodile
- **Farancia erytrogramma** Rainbow Snake
- **Nerodia clarkii clarkii** Gulf Saltmarsh Watersnake
- **Nerodia clarkii compressicauda** Mangrove Saltmarsh Watersnake
- **Nerodia clarkii taeniata** Atlantic Saltmarsh Watersnake
- **Caretta caretta** Loggerhead Sea Turtle
- **Lepidochelys kempii** Kemp’s Ridley Sea Turtle
- **Malaclemys terrapin** Diamond-backed Terrapin

## Fish

- **Acipenser oxyrinchus desotoi** Gulf of Mexico Sturgeon
- **Acipenser oxyrinchus oxyrinchus** Atlantic Sturgeon
•  *Alosa aestivalis*  
•  *Alosa alabamae*  
•  *Aetobatus narinari*  
•  *Carcharhinus plumbeus*  
•  *Carcharias taurus*  
•  *Negaprion brevirostris*  
•  *Pristis pectinata*  
•  *Pristis pristis*  
•  *Atractosteus spatula*  
•  *Agonostomus monticola*  
•  *Epinephelus itajara*  

**Invertebrates**
•  *Panopea bitruncata*  
•  *Uca minax*  
•  *Uca pugilator*  
•  *Uca pugnax*  
•  *Cicindela togata togata*  

**Conservation Threats**

Threats to Tidal Flat habitat that were also identified for multiple other habitats are addressed in Chapter 7: Multiple Habitat Threats and Conservation Actions. These threats include:

- Channel modification/shipping lanes
- Chemicals and toxins
- Climate variability
- Coastal development
- Dam operations/incompatible release of water (quality, quantity, timing)
- Disruption of longshore transport of sediments
- Fishing gear impacts
- Harmful algal blooms
- Incompatible industrial operations
- Incompatible recreational activities
- Industrial spills
- Invasive animals
- Management of nature (beach nourishment and impoundments)
- Roads, bridges and causeways
- Shoreline hardening
- Surface and groundwater withdrawal
- Vessel impacts

The following stresses and sources of stress threaten this habitat:

<table>
<thead>
<tr>
<th>Stresses</th>
<th>Habitat Stress Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Altered water quality – physical, chemistry</td>
<td>Very High</td>
</tr>
<tr>
<td>B Altered species composition</td>
<td>Very High</td>
</tr>
<tr>
<td>C Altered water quality - contaminants</td>
<td>Very High</td>
</tr>
<tr>
<td>D Habitat destruction</td>
<td>Very High</td>
</tr>
<tr>
<td>E Habitat disturbance</td>
<td>Very High</td>
</tr>
<tr>
<td>F Altered hydrological regime</td>
<td>Medium</td>
</tr>
<tr>
<td>G Altered weather regime/sea level rise</td>
<td>Medium</td>
</tr>
</tbody>
</table>

The sources of stress, or threats, were used to generate conservation actions.
### Sources of Stress

<table>
<thead>
<tr>
<th>Sources of Stress</th>
<th>Habitat Source Rank</th>
<th>Related Stresses (see above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal development</td>
<td>Very High</td>
<td>B, C, D, E, F</td>
</tr>
<tr>
<td>Incompatible industrial operations</td>
<td>Very High</td>
<td>B, C, D, E, F</td>
</tr>
<tr>
<td>Incompatible recreational activities</td>
<td>High</td>
<td>B, E</td>
</tr>
<tr>
<td>Roads, bridges and causeways</td>
<td>High</td>
<td>D, E, F</td>
</tr>
<tr>
<td>Inadequate stormwater management</td>
<td>High</td>
<td>A, B, C, E, F</td>
</tr>
<tr>
<td>Management of nature (beach nourishment, impoundments)</td>
<td>High</td>
<td>B, E, F</td>
</tr>
<tr>
<td>Invasive animals</td>
<td>High</td>
<td>B, E</td>
</tr>
<tr>
<td>Chemicals and toxins</td>
<td>High</td>
<td>C</td>
</tr>
<tr>
<td>Industrial spills</td>
<td>High</td>
<td>B, C</td>
</tr>
<tr>
<td>Dam operations/incompatible release of water (quality, quantity, timing)</td>
<td>High</td>
<td>A, C, F</td>
</tr>
<tr>
<td>Solid waste</td>
<td>Medium</td>
<td>E</td>
</tr>
<tr>
<td>Disruption of longshore transport of sediments</td>
<td>Medium</td>
<td>A, B, D, F</td>
</tr>
<tr>
<td>Climate variability</td>
<td>Medium</td>
<td>G</td>
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<tr>
<td>Shoreline hardening</td>
<td>Medium</td>
<td>D, F</td>
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<tr>
<td>Boating impacts</td>
<td>Medium</td>
<td>E</td>
</tr>
<tr>
<td>Channel modification/shipping lanes</td>
<td>Medium</td>
<td>D, E, F</td>
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<tr>
<td>Surface water withdrawal</td>
<td>Medium</td>
<td>A</td>
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<tr>
<td>Groundwater withdrawal</td>
<td>Medium</td>
<td>A</td>
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<tr>
<td>Vessel impacts</td>
<td>Medium</td>
<td>D, E</td>
</tr>
<tr>
<td>Harmful algal blooms</td>
<td>Medium</td>
<td>B</td>
</tr>
<tr>
<td>Fishing gear impacts</td>
<td>Low</td>
<td>E</td>
</tr>
</tbody>
</table>

### Statewide Threat Rank of Habitat

**Very High**

### Conservation Actions

Actions to abate the threats to Tidal Flat habitats that were also identified as statewide threats (see list above) are in Chapter 7: Multiple Habitat Threats and Conservation Actions. Many of the threats to Tidal Flats are the same as for several other marine and estuarine habitats. Consequently, actions to abate these threats will be the same or similar to the actions recommended for abating threats to several other marine and estuarine habitats (e.g., Beach/Surf Zone, Mangrove Swamp, Seagrass, Coastal Tidal River or Stream).