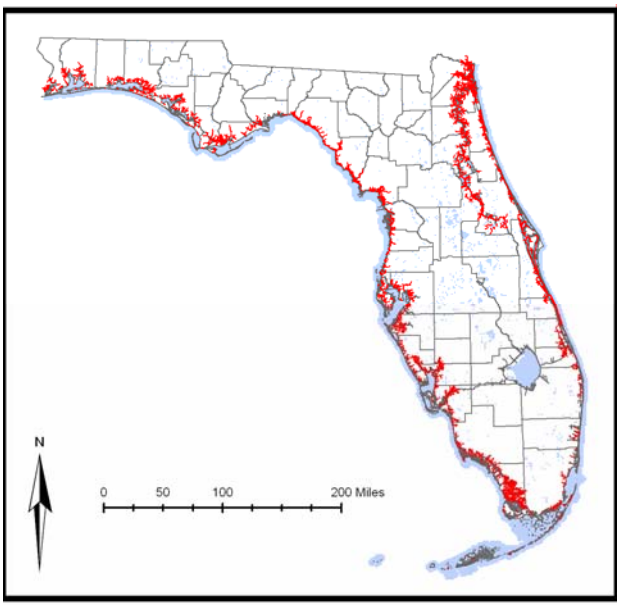
Coastal Tidal River or Stream



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

Status

Current condition: Poor and declining. According to the best available GIS information at this time (see Appendix D. GIS Data Tables), the combined total length of all of Florida's Coastal Tidal River or Stream is approximately 6,088 miles (9,798 km).

Habitat Description

FNAI type: None

Coastal Tidal River or Stream habitat includes the freshwater or brackish portions of a river or stream adjacent to an estuary or marine habitat in which the effects of tides cause the rise and fall of water levels. The effect of the tides at the upper limits of influence may lag several hours behind tides on the coast. The amount of water movement is controlled by the height of the tides, tidal range, downstream freshwater flow rates, rainfall, and wind. Saltwater wedges are formed in many of these systems, enabling numerous species a mechanism to move up or down river. Water flow is bidirectional in coastal tidal rivers and streams; as the tide rises, water flows toward the head of the river and, as the tide retreats, the water flows toward the coastal outlet. This habitat bridges the freshwater and marine realms, with aquatic communities ranging from tidal freshwater to tidal brackish; salinities can vary from freshwater to approximately that of seawater. This variation, along with temperature and water clarity, determines the flora and fauna of the Coastal Tidal River or Stream. Typical plants may include cord grass or submerged aquatic vegetation such as seagrasses and algae.

The Coastal Tidal River or Stream drains to the Gulf of Mexico or the Atlantic Ocean on Florida's entire coast and comprises the dominant stream habitat in the south Florida region. The longest or most extensive area of this habitat occurs in the lower St. Johns River. Other coastal bay systems such as Choctawhatchee Bay, Pensacola Bay, Tampa Bay, and Charlotte Harbor are also included in this habitat. Numerous small tidal creeks and coastal rivers are also included, especially in the Big Bend region of Florida's Gulf coast along with the lower portions of other large rivers including the Suwannee and Escambia.

Associated Species of Greatest Conservation Need

Mammals

- *Eumops floridanus* Florida Bonneted Bat
- *Corynorhinus rafinesquii* Rafinesque's Big-eared Bat
- *Eptesicus fuscus* Big Brown Bat
- *Lutra canadensis lataxina* River Otter
- *Trichechus manatus latirostris* Florida Manatee
- *Eubalaena glacialis* North Atlantic Right Whale
- *Tursiops truncatus* Atlantic Bottlenose Dolphin

Birds

- *Anas fulvigula fulvigula* Florida Mottled Duck
- *Aythya affinis* Lesser Scaup
- *Gavia immer* Common Loon
- *Podiceps auritus coronutus* Horned Grebe
- *Pelecanus occidentalis* Brown Pelican
- *Ardea herodias occidentalis* Great White Heron
- *Egretta thula* Snowy Egret
- *Egretta caerulea* Little Blue Heron
- *Egretta rufescens* Reddish Egret
- *Nycticorax nycticorax* Black-crowned Night-Heron
- *Nyctanassa violacea* Yellow-crowned Night-Heron
- *Ajaja ajaja* Roseate Spoonbill
- *Mycteria Americana* Wood Stork
- *Haliaeetus leucocephalus* Bald Eagle
- *Haematopus palliatus* American Oystercatcher
- *Limosa fedoa* Marbled Godwit
- *Sterna nilotica* Gull-billed Tern
- *Sterna caspia* Caspian Tern
- *Sterna maxima* Royal Tern
- *Sterna sandvicensis* Sandwich Tern
- *Sterna antillarum* Least Tern

Reptiles

- *Crocodylus acutus* American Crocodile
- *Macrochelys temminckii* Alligator Snapping Turtle
- *Malaclemys terrapin* Diamondback Terrapin
- *Pseudemys concinna suwanniensis* Suwannee Cooter
- *Pseudemys nelsoni* Florida Redbelly Turtle - Florida Panhandle
- *Nerodia clarkii clarkii* Gulf Salt Marsh Snake

- *Nerodia clarkii compressicauda* Mangrove Salt Marsh Snake
- *Nerodia clarkii taeniata* Atlantic Salt Marsh Snake

Fish

- *Carcharhinus leucas* Bull Shark
- *Galeocerdo cuvier* Tiger Shark
- *Negaprion brevirostris* Lemon Shark
- *Rhizoprionodon terraenovae* Atlantic Sharpnose Shark
- *Pristis pectinata* Smalltooth Sawfish
- *Acipenser oxyrinchus oxyrinchus* Atlantic Sturgeon
- *Acipenser oxyrinchus desotoi* Gulf Sturgeon
- *Atractosteus spatula* Alligator Gar
- *Megalops atlanticus* Tarpon
- *Anguilla rostrata* American Eel
- *Alosa aestivalis* Blueback Herring
- *Alosa alabamae* Alabama Shad
- *Also mediocris* Hickory Shad
- *Alosa sapidissima* American Shad
- *Opsanus beta* Gulf Toadfish
- *Opsanus tau* Oyster Toadfish
- *Agonostomus monticola* Mountain Mullet
- *Mugil cephalus* Striped Mullet
- *Mugil curema* White Mullet
- *Mugil gyrans* Whirligig Mullet
- *Gambusis rhizophorae* Mangrove Gambusia
- *Microphis brachyurus* Opossum Pipefish
- *Syngnathus scovelli* Gulf Pipefish
- *Centropomus ensiferus* Swordspine Snook
- *Centropomus parallelus* Smallscale Fat Snook
- *Centropomus pectinatus* Tarpon Snook
- *Centropomus undecimalis* Common Snook
- *Morone saxatilis* Striped Bass
- *Epinephelus itajara* Goliath Grouper
- *Pomatomus saltatrix* Bluefish
- *Lutjanus griseus* Gray Snapper
- *Eugerres plumieri* Striped Mojarra
- *Archosargus probatocephalus* Sheepshead
- *Cynoscion nebulosus* Spotted Seatrout
- *Cynoscion regalis* Weakfish
- *Pogonias cromis* Black Drum
- *Sciaenops ocellatus* Red Drum
- *Gobiesox strumosus* Skilletfish
- *Dormitator maculatus* Fat Sleeper
- *Eleotris amblyopsis* Largescaled Spinycheek Sleeper
- *Gobiomorus dormitor* Bigmouth Sleeper
- *Awaous banana* River Goby
- *Ctenogobius pseudofasciatus* Slashcheek Goby
- *Paralichthys albigutta* Gulf Flounder
- *Paralichthys dentatus* Summer Flounder
- *Paralichthys lethostigma* Southern Flounder

Invertebrates

- *Ophiophragmus filograneus* Brittle Star
- *Sesarma benedicti* Benedict's Wharf Crab
- *Goniopsis cruentata* Mangrove Crab
- *Callinectes sapidus* Blue Crab
- *Oecetis floridana* Florida Long-horn Sedge
- *Chimarra florida* Floridian Finger-net Caddisfly

Conservation Threats

Threats to the Coastal Tidal River or Stream habitat that were also identified for multiple other freshwater and wetland habitats are addressed in Chapter Multiple Habitat Threats and Conservation Actions. These threats include:

- Channel modification/shipping lanes
- Chemicals and toxins
- Climate variability
- Conversion to commercial/industrial development
- Conversion to housing and urban development
- Invasive animals
- Invasive plants
- Nutrient loads–agriculture
- Nutrient loads–urban
- Roads

Threats to the Coastal Tidal River or Stream habitat that were also identified for multiple other marine and estuarine habitats are addressed in the Chapter 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)
- Fishing gear impacts
- Incompatible fishing pressure
- Incompatible industrial operations
- Incompatible recreational activities
- Incompatible resource extraction: mining/drilling
- Industrial spills
- Invasive animals
- Invasive plants
- Management of nature (beach nourishment and impoundments)
- Nutrient loads (urban)
- Roads, bridges and causeways
- Shoreline hardening
- Surface water and groundwater withdrawal
- Vessel impacts

Additional threats specific to this habitat include the operation of dams or water control structures, especially in south and central Florida, dredging and channel modification, loss of submarine springs, and shoreline hardening. The impacts of recreational activities from boating, especially impacts to manatees and seagrass communities in coastal rivers, and discarded fishing gear that threatens wildlife were specifically identified for this habitat.

The following stresses (and sources of stress below) threaten this habitat in freshwater habitats:

Stresses		Habitat Stress Rank
A	Altered species composition/dominance	High
B	Altered hydrologic regime	High
C	Altered landscape mosaic or context	High
D	Habitat destruction or conversion	Medium
E	Altered water quality of surface water or aquifer: nutrients	Medium
F	Altered water quality of surface water or aquifer: contaminants	Medium
G	Altered water salinity, pH, conductivity or other physical water quality characteristics of surface water of aquifer	Medium
H	Fragmentation of habitats, communities, ecosystems	Medium
I	Altered community structure	Medium
J	Erosion/sedimentation	Medium
K	Habitat degradation/disturbance	Low

The sources of stress, or threats, were used to generate conservation actions. The following sources of stress are threats identified for freshwater habitats:

Sources of Stress		Habitat Source Rank	Related Stresses (see above)
1	Surface water withdrawal	**High**	A, B, C, G, I
2	Channel modification/shipping lanes	**High**	A, B, D, G, I
3	Dam operations	**High**	A, B, G, H, I
4	Conversion to housing and urban development	**High**	B, C, D
5	Shoreline hardening	**High**	A, D, H, I
6	Management of nature–veg clearing/snagging for water conveyance	**Medium**	A, B, H, I
7	Roads	**Medium**	D
8	Chemicals and toxins	**Medium**	A, F
9	Conversion to commercial and industrial development	**Medium**	D
10	Nutrient loads–agriculture	**Medium**	A, E
11	Nutrient loads–urban	**Medium**	A, E
12	Invasive plants	**Medium**	A, I
13	Sea level rise	**Low**	B
14	Invasive animals	**Low**	A
Statewide Threat Rank of Habitat		**Very High**	

The following stresses (and sources of stress below) threaten this habitat in marine and estuarine habitats:

Stresses		Habitat Stress Rank
L	Altered hydrologic regime	Very High
M	Altered species composition	Very High
N	Altered water quality–contaminants	Very High
O	Altered water quality–physical, chemistry	Very High
P	Habitat destruction	Very High
Q	Habitat disturbance	Very High
R	Altered weather regime/sea level rise	High
S	Altered water quality–nutrients	High
T	Missing key communities or functional guilds/trophic shift	High
U	Sediment contamination	Medium
V	Sedimentation	Medium

The sources of stress, or threats, were used to generate conservation actions. The following sources of stress are threats identified for marine and estuarine habitats:

Sources of Stress		Habitat Source Rank	Related Stresses (see above)
1	Coastal development	**Very High**	L,M,P,T,U
2	Dam operations/incompatible release of water: (quality, quantity, timing)	**Very High**	L,M,N,O,Q,S,W
3	Channel modification/shipping lanes	**Very High**	L,O,P,Q,U,W
4	Inadequate stormwater management	**Very High**	L,M,N,O,Q,S,U
5	Shoreline hardening	**Very High**	L,P
6	Management of nature (beach nourishment, impoundments)	**High**	L,M,,O,Q,T
7	Chemicals and toxins	**High**	N,V
8	Industrial spills	**High**	N,Q,V
9	Incompatible industrial operations	**High**	L,M,N,T
10	Surface water withdrawal	**High**	L,M,O
11	Invasive animals	**High**	M,Q
12	Invasive plants	**High**	M,U
13	Incompatible resource extraction: mining/drilling	**High**	O
14	Climate variability	**High**	R
15	Nutrient loads (all sources)	**High**	S
16	Utility corridors	**Medium**	L,P
17	Vessel impacts	**Medium**	P,Q
18	Boating impacts	**Medium**	P,Q

Sources of Stress		Habitat Source Rank	Related Stresses (see above)
19	Incompatible recreational activities	Medium	M,Q
20	Groundwater withdrawal	Medium	L,M,O
21	Incompatible fishing pressure	Medium	M,T
22	Solid waste	Medium	Q
23	Roads, bridges and causeways	Medium	L,P,U
24	Acoustic pollution	Medium	Q
25	Thermal pollution	Medium	O
26	Fishing gear impacts	Medium	Q
Statewide Threat Rank of Habitat		**Very High**	

Conservation Actions

Actions to abate the threats to Coastal Tidal River or Stream habitats that were also identified as statewide threats (see lists above in "Conservation Threats" section) are in the Chapter Multiple Habitat Threats and Conservation Actions. Actions for this habitat were developed in both the terrestrial/freshwater and marine workshops.

Several of the actions developed for a statewide threat were only applicable to Coastal Tidal River or Stream and a few other habitats (i.e., Aquatic Cave, Calcareous Stream, Cypress Swamp, Freshwater Marsh and Wet Prairie, Natural Lake, Reservoir/Managed Lake, Seepage/Steephead Stream, Softwater Stream, Spring and Spring Run, and Terrestrial Cave) and are listed below. Additional actions were developed to address threats specific to this habitat. These actions are intended to prevent harm to aquatic ecosystems by managing the magnitude, duration, and frequency of fresh water inflows to coastal habitats and remediating the damage through targeted restoration projects, reducing sediment and nutrient loading through the development of advanced best management practices for urban activities, increasing the compatibility of urban development with conservation of coastal stream and associated riparian wetland and estuarine habitat, increasing scientific knowledge on the threats to submarine springs in coastal rivers, and improving enforcement for existing fishing and boating regulations.

TERRESTRIAL/FRESHWATER-BASED ACTIONS

Dam Operations

Overall Rank	Capacity Building	*Feasibility*	*Benefits*	Cost
H	Encourage interstate coordination of Strategy actions to ensure protection of all fish and wildlife resources when water management operations are altered.	M	H	L

L	Coordinate multi-agency review of USACE activities, including biological aspects (fish spawn guidelines, protection of fish and wildlife resources) of water control plans for interstate water projects, fish spawn guidelines, re-establishing natural seasonal fluctuation of flows.	H	L	M
Overall Rank	**Land/Water/Species Management**	*Feasibility*	*Benefits*	**Cost**
M	Work cooperatively with other agencies to restore appropriate salinity regimes to coastal habitats	H	M	VH
Overall Rank	**Research**	*Feasibility*	*Benefits*	**Cost**
H	Determine the appropriate hydrological flows and levels for water reservations on the Apalachicola, Yellow, Ochlockonee and other interstate rivers using ESWM (Ecologically Sustainable Water Management) approach.	M	H	H
M	Evaluate cumulative impacts of small rural impoundments on fish and wildlife.	M	M	M
L	Evaluate feasibility of incentive programs to remove small rural impoundments.	H	L	L

Conversion to Housing and Urban Development

Overall Rank	Economic and Other Incentives	*Feasibility*	*Benefits*	Cost
L	Encourage tax or other incentives, such as density transfers, for environmentally friendly comprehensive development plans for projects that front on rivers and floodplains.	M	L	VH
Overall Rank	**Planning and Standards**	*Feasibility*	*Benefits*	**Cost**
L	Encourage establishment of and assist in development of criteria to create buffer zones between new development and river or floodplain edges.	M	L	M

Roads

Overall Rank	Capacity Building	*Feasibility*	*Benefits*	Cost
M	Encourage multi-agency participation in the Technical Advisory Committee for the Stream Crossing Technical Center (SCTC).	VH	L	L
Overall Rank	**Education and Awareness**	*Feasibility*	*Benefits*	**Cost**
L	Provide training to road maintenance personnel on methods for minimizing sediment movement to water bodies.	M	L	L
Overall Rank	**Land/Water/Species Management**	*Feasibility*	*Benefits*	**Cost**
L	Support the implementation of the Stream Crossing Technical Center (SCTC) to promote recovery and conservation of aquatic ecosystems from impacts of unpaved road-stream crossings.	H	L	M
L	Based on a stream crossing inventory and prioritization, develop funding opportunities for road stabilization projects in Florida counties.	H	L	H

Chemicals and Toxins

Overall Rank	Planning and Standards	*Feasibility*	*Benefits*	Cost
L	Develop management techniques and standards for private landowners that minimize runoff of chemicals and toxins into wetlands and aquatic systems.	H	L	M

Overall Rank	Research	Feasibility	Benefits	Cost
L	Conduct research defining appropriate sediment quality standards for the various aquatic and marine systems for development and implementation of state sediment quality standards. Fund research defining the cause-and-effect relationship between sediment contamination (individually and in chemical interactions) and key biological indicators of degradation in different aquatic and marine systems.	M	L	H
L	Conduct research defining standards for persistent organic contaminants for the various aquatic and marine systems for development and implementation of state water quality standards. Fund research defining the cause-and-effect relationship between contamination from organics (individually and in chemical interactions) and key biological indicators of degradation in different aquatic and marine systems.	M	L	H

Invasive Plants

Overall Rank	Research	Feasibility	Benefits	Cost
M	Research methods for control of aquatic invasive species in flowing waters.	VH	L	M

MARINE-BASED ACTIONS

Industrial Spills

Overall Rank	Planning and Standards	Feasibility	Benefits	Cost
M	Assist in the revision of emergency response plans in cooperation with the county EOCs, FDEP, DCA, and USCG for coastal waters where water-borne transport of oil and chemicals occur. Encourage bi-annual updates.	H	M	M
M	Assist in the revision of emergency response plans in cooperation with the county EOCs, FDEP, DCA, USCG and EPA for coastal waters that may be subject to land-based spills of oil and chemicals. Encourage bi-annual updates.	H	M	M

Surface/Groundwater withdrawal

Overall Rank	Land/Water/Species Management	Feasibility	Benefits	Cost
M	Characterize and support restoration of appropriate flow regimes in estuarine systems and coastal tidal streams.	M	M	VH
Overall Rank	**Policy**	*Feasibility*	*Benefits*	**Cost**
H	Explore options and alternative methods to protect submarine springs.	H	H	L

Incompatible Recreational Activities

Overall Rank	Land/Water/Species Management	Feasibility	Benefits	Cost
M	Improve understanding of and voluntary compliance with watercraft speed limits/zones, and work with all affected parties to explore options for reassessing speed zones.	H	M	M
L	Improve understanding of, signage for, and voluntary compliance with manatee protection zones.	H	L	M

Fishing Gear Impacts

Overall Rank	Land/Water/Species Management	*Feasibility*	*Benefits*	Cost
M	Continue to support and expand coastal clean-up. Expand into underwater habitats and statewide (include lead sinkers).	VH	L	M