Draft - This spreadsheet is being offered as a strawman guidance tool to help organize watershed information and to start discussions for planning purposes.

Florida Gulf Coast Watersheds

Watershed Issues/Challenges	Perdido River and Bay	Pensacola Bay		Choctawhatchee River and Bay	St Andrew Bay	Apalachicola River		Ochlockonee River		St. Marks River	Ocklawaha River	Suwannee River	Santa Fe River		Coastal Rivers	Withlacoochee River				Charlotte Harbor	Springs Coast		Tampa Bay		St. Joseph Sound	Clearwater Harbor		Sarasota Bay	Caloosahatchee River		Lake Hicpochee				Everglades West Coast	Potential Solutions to Watershed Issues/Challenges
	Northwest/Panhandle											Suwannee/ Big Bend								Southwest										South							
Stormwater/wastewater discharge *Degradation of water quality in rivers, bays, and estuaries, impacts to fisheries*																																					
Untreated or uncontrolled stormwater runoff and nonpoint source pollution																																					• Improve existing wastewater treatment infrastructure or facilities • Eliminate septic systems by providing connections to sewer systems • Improve natural or constructed stormwater retention features to improve management of stormwater runoff, e.g. - installation of rain gardens, rain barrels, and permeable pavement • Implement BMPs for agricultural and urban stormwater management to reduce nutrient and pesticide/herbicide loading • Construct wet detention facility • Installation of stormwater catchment area and an under drain system to capture silt laden runoff
Excess nutrients (N&P) and bacteria due to coastal community and rural wastewater management																																					
Excess nutrients from treated wastewater discharges																																					
Untreated discharges from mosquito control and/or drainage ditches																																					
Nutrient loading from agricultural land																																					
Coastal tributary freshwater quality and quantity - surface water, springs, and groundwater *Degradation of freshwater quality and reduced quantity*																																					
Need to protect flow and quality of freshwater to support diversity and abundance of natural resources, including marine aquaculture (clams)																																					• Retrofit water distribution systems to allow use of reclaimed water in residential, commercial, and public areas • Improve efficiency of irrigation and water distribution systems to reduce water loss • Retrofit agricultural irrigation and fertilization systems to conserve water and protect or improve water quality in freshwater sources such as springs • Improve water treatment and retention to protect and improve groundwater quality and increase quantity of water recharging to groundwater • Construct offline reservoirs to manage surface water and ensure adequate baseflow during low-flow conditions • Implement stormwater management and treatment actions (described above) • Acquire and protect high-quality habitat that supports natural freshwater systems • Replace, restore, or protect bulkheads near freshwater features to prevent sedimentation and maintain or improve water quality • Address erosion issues (e.g., excess sedimentation, reduced habitat quality) affecting freshwater sources and habitats (see next section for more detailed solutions) • Develop a regional water supply system for parks or other consumptive water uses to remove the effects of local withdrawals on springs
Need for conservations, capture, distribution, and use of reclaimed water																																					
Need to improve irrigation systems to increase efficiency, reduce ground water withdrawal, and reduce nutrient loading to surface water and ground water																																					
Need for protection of groundwater quality and quantity																																					
Need to increase water distribution system efficiency to reduce losses																																					
Need to protect natural springs, streams, and associated habitat																																					
Need to restore spring and stream habitat and wetland and riparian habitat to protect water quality																																					

Erosion and sedimentation of streams *Degraded water quality, loss of fish and wildlife habitat*																																									
Erosion-induced habitat loss, including channelized, incised, or eroding stream banks																																									• Pave dirt roads that are sources of erosion near waterways • Install permeable pavement to reduce erosion and allow infiltration of runoff • Restore channelized and degraded stream and spring banks to reduce erosion and restore natural stream function • Targeted dredging to remove sediment affecting water quality and hydraulics • Construct stormwater treatment structures to replace old ditches that exacerbate erosion and sedimentation problems
Sedimentation and turbidity from erosion sites and unpaved roads, habitat smothering, loading of sediments and suspended solids into riverine and estuarine waters																																									
Coastal habitat degradation *Coastal shoreline, estuarine, embayment and bayou habitat degradation*																																									
Loss and degradation of bayou and estuarine shoreline, embayments, and littoral habitat due to shoreline alteration, erosion, and sedimentation																																									• Restore living shorelines, including actions such as establishing emergent marsh vegetation and submerged aquatic vegetation and oyster reef restoration • Preserve and protect high-quality wetland habitat and adjacent upland habitat through conservation easements or land acquisition • Restore degraded coastal habitat • Implement/support oyster shell recycling programs • Establish/support plant nursery infrastructure and facilities to support restoration projects throughout the region • Restore natural hydrologic conditions by installing retention basins in degraded areas, and bridges, culverts, and low water crossings to reduce impacts of human uses on wetland habitats • Vegetation planting/enhancement • Implement stormwater management and treatment actions • Implement stormwater management and treatment actions (see above for more detailed description) • Reduce or moderate the volume of sheetflow and associated harmful inputs of freshwater into estuaries • Restore and/or enhance historic wetland hydroperiods
Need for coastal habitat protection or preservation																																									
Degradation of estuarine water quality																																									
Degradation of coastal dune lake water quality and habitat																																									
Coastal and tributary floodplain alteration and habitat loss																																									
Hydrologic impacts to coastal wetlands - loss of hydrologic connection between wetlands and tributaries, bays, or estuaries																																									
Need for coastal habitat restoration or enhancement																																									
Marine habitat degradation																																									
Degraded seagrass habitat, prop scar damage to seagrass beds																																									• Restore degraded seagrass habitat • Map seagrass habitat, track changes in condition and location following disturbance (natural and anthropogenic) • Review and improve seagrass habitat management plans • Develop community-based water quality and seagrass monitoring initiative
Invasive species																																									
Presence of marine invasive species in bays and estuaries																																									• Control invasive species in natural habitats • Control invasive species in urban/developed areas to improve vegetation and reduce the need for use of fertilizers and herbicides that may negatively affect water quality
Presence of freshwater invasive species																																									
Presence of terrestrial invasive species in floodplain, wetland, and upland habitats																																									
Fisheries management																																									
Fish population management																																									• Develop and maintain a fish hatchery
Oyster bed management																																									
Upland habitat																																									
Need to protect and preserve in-tact upland habitat																																									• Protect high-quality, in-tact, upland habitat through land acquisition, conservation easements, or other land protection mechanisms