Southwest Florida Feasibility Study: A Comprehensive Watershed Plan

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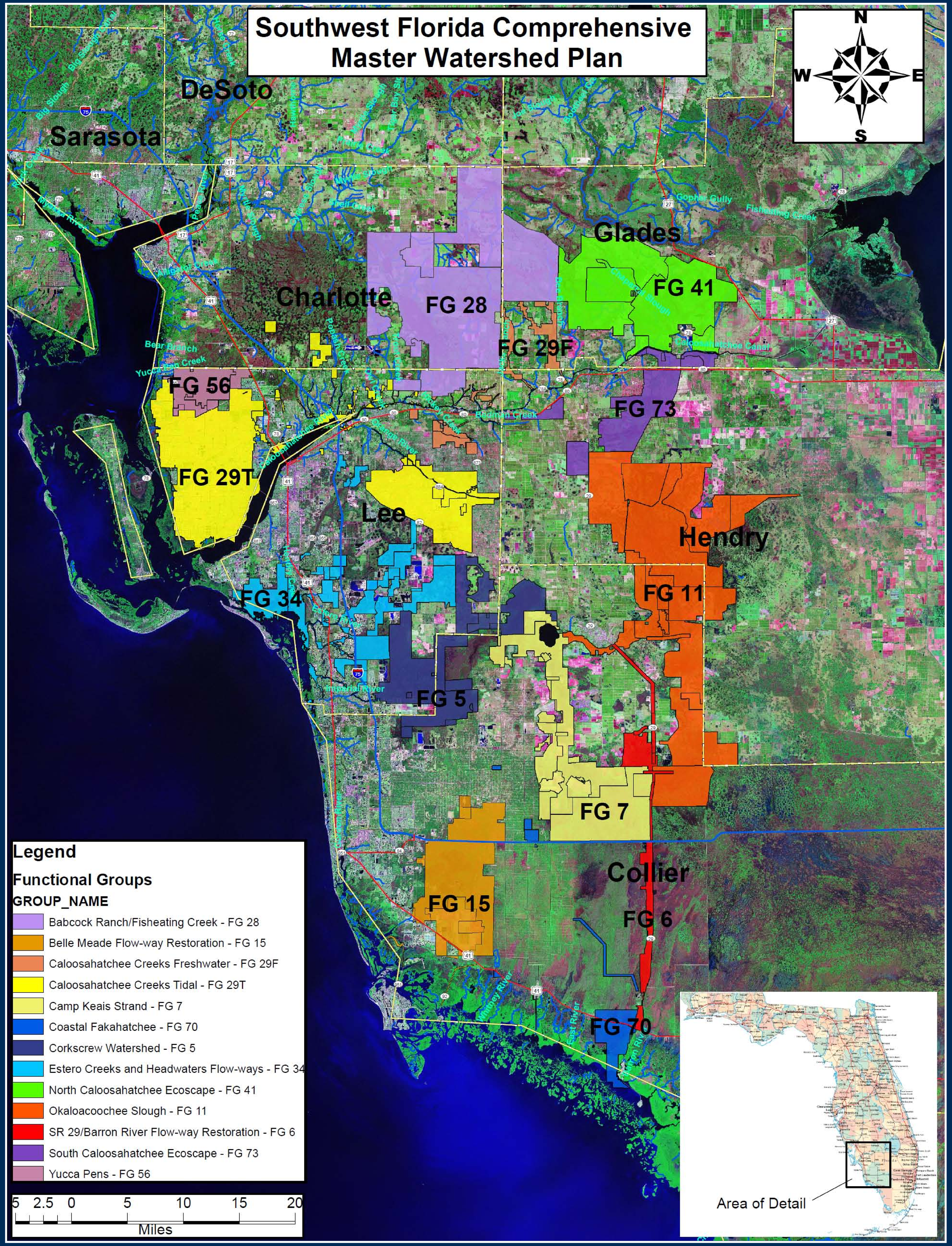
US Army Corps of Engineers ®
Jacksonville District

Purpose of the Southwest Florida Comprehensive Watershed Master Plan (SWFCWMP)

- The Southwest Florida Feasibility Study was authorized as a component of the Comprehensive Everglades Restoration Plan.
- The purpose of the Southwest Florida Feasibility Study SWFCWMP is to identify environmental problems and opportunities in the southwest Florida region and from this develop a comprehensive watershed management plan that fosters environmental restoration while also meeting regional water resource needs.
- The goals of the SWFCWMP include:
  - Reduce pulse flows to the coast thereby restoring more natural estuarine salinity regimes
  - Restore inland wetland and upland mosaic to reestablish natural ecosystems that support native flora and fauna, including 23 listed species
  - Improve the quantity, quality, timing and distribution of surface water and groundwater flows for environmental, agricultural and urban uses
- Development of this plan has been a multi-agency collaborative effort.

Intended Use of the SWFCWMP

- This is a conceptual plan that includes the framework for a wide range of features intended for future detailed study and implementation by local, state, and federal agencies in cooperation with public and private land owners should funding become available.
- Collaborative implementation is anticipated, particularly on the USACE interest components.
- All components proposed on property currently under private ownership will only be considered for further study and implementation under agreement with the property owner.



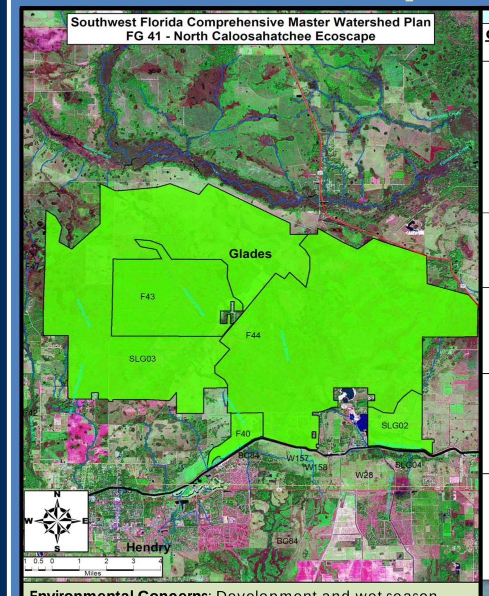
The map above displays the 13 Functional Groups that comprise the Southwest Florida Comprehensive Watershed Master Plan. A Functional Group is one or more project components in a specific geographic footprint that provide synergistic, comprehensive, regional restoration for critical hydrologic locations to achieving project planning objectives. To the right is a more detailed description of each of the 13 Functional Groups color coded to correspond to the larger regional map above.

Schedule*

- Draft Southwest Florida Comprehensive Watershed Master Plan Complete - Fall 2010
- Public and Agency review of the Draft Report– Spring 2011
- Public Workshops Held Locally – Spring 2011
- Final Report Available to the Public – Summer 2011
- Report Submitted to Congress – Fall 2011

* Subject to change as directed by USACE/SFWMD management

Functional Group 41

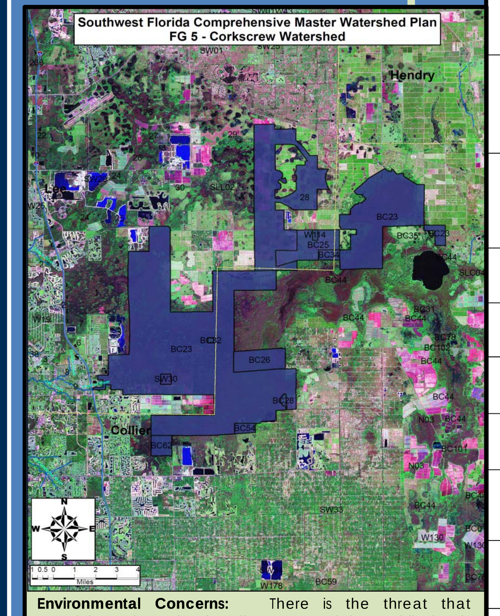


Environmental Concerns: Development and wet season drainage has degraded wetland habitat, caused landscape compartmentalization, and lowered ground water levels, making the area more susceptible to drought, fire, and invasion by exotic vegetation. Encroachments by roadways, agricultural developments and exotic vegetation have restricted the historic conveyance and ecological functions of the wetlands and wildlife habitats.

Functional Group 41- South Caloosahatchee Ecoscape

Component Number	Title	Description
F40	Lake Flirt	Re-hydrate lakes and associated wetlands (Lake Flirt, Bonnet and Lettuce) by placing a lock structure at a point on the Caloosahatchee River where the original Lake Flirt Falls were located and weirs at points where existing irrigation canals exit the river.
F43	Chaparral Slough	Restoring hydrologic connectivity by road and berm removal, culvert construction, ditch filling.
F44	Linden Pens Marsh Connection	Land acquisition, invasive exotic vegetation removal, canal filling, and hydrologic improvements to existing roads.
SLG02	Citrus Center slough	Land acquisition, road removal and/or culverting, ditch removal/plugging, invasive exotic vegetation control, farm field restoration, and berm removal.
SLG03	Polywog Creek Restoration	Land acquisition and restoration including road removal and/or culverting, ditch removal/plugging, exotic vegetation control, farm field restoration, and berm removal.

Functional Group 5

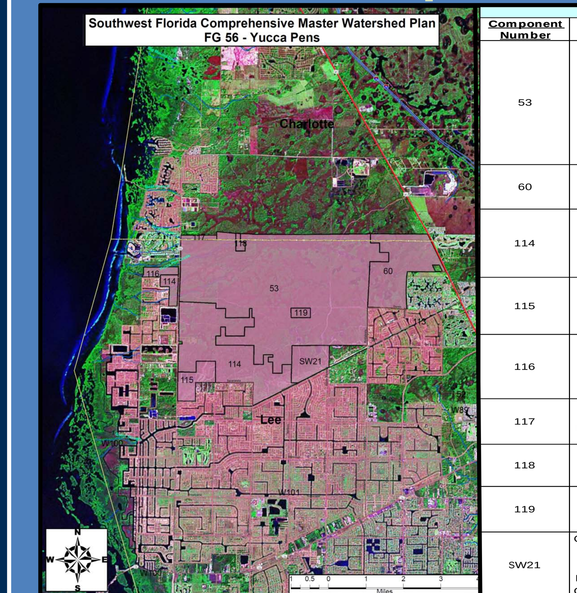


Environmental Concerns: There is the threat that remaining private lands adjacent to pristine public lands will be converted to residential development over the long term. Drainage ditches and canals associated with residential areas and agricultural lands have eliminated much of the natural sheetflow and have disrupted the natural hydrology, over draining upland areas and flooding downstream wetlands. Additionally, exotic and nuisance native vegetation is widespread throughout FG 5.

Functional Group 5- Corkscrew Watershed

Component Number	Title	Description
28	Corkscrew Woodstork Flow-ways	Land acquisition, hydrologic restoration, habitat restoration, based on woodstork biology and feeding needs.
BC23	Corkscrew Regional Ecosystem Watershed Acquisition and Management	Acquisition and hydrologic restoration in the form of culverting, road removal, berm removal, ditch filling and any removal of any features impeding flowways. Other restoration would involve farm field restoration and exotic vegetation removal.
BC25	Corkscrew Swamp Sanctuary Hydrologic Restoration	Construction of a detention area and a filter marsh. Upland restoration in the northern section of grove and restoring the grove's southern section to hydric flatwoods and wet prairie. A spreader canal would be constructed in northeastern quadrant.
BC26	Bird Rookery Swamp Hydrologic Improvement	Restoration of flows through trams in Bird Rookery Swamp including culvert construction, berm removal and other hydrologic improvements.
BC28	East Bird Rookery Swamp Upland Habitat Restoration	Restoration of farmland and improved pastures to xeric pine flatwoods.
BC32	Palm Tree Farm Restoration	Land acquisition and subsequent restoration of the private tree farm back to the natural preexisting habitat.
BC34	CREW Center Restoration	Land acquisition of 30 acres in north east corner of the site and restoration of farm field back to mesic pine flatwoods.
BC54	Northern Golden Gate Estates Unit 53 Restoration and Acquisition	Land acquisition along 41st St. in NGGE for hydrologic restoration, wetland restoration, berm removal to improve flow, and invasive exotic vegetation control.
BC62	Cocohatchee Slough	Removal of spoil berms, backfill/plugging ditches, weir removal/refitting, road culverting, filter marsh construction, and invasive exotic vegetation removal.
SW07	Corkscrew Watershed Ag Water Containment Area	Increase water storage capacity of agricultural detention areas.
SW30	Kehl Canal Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
W114	Corkscrew Swamp Sanctuary MAPS	Construction of an Algal Turf Scrubber (ATS).

Functional Group 56

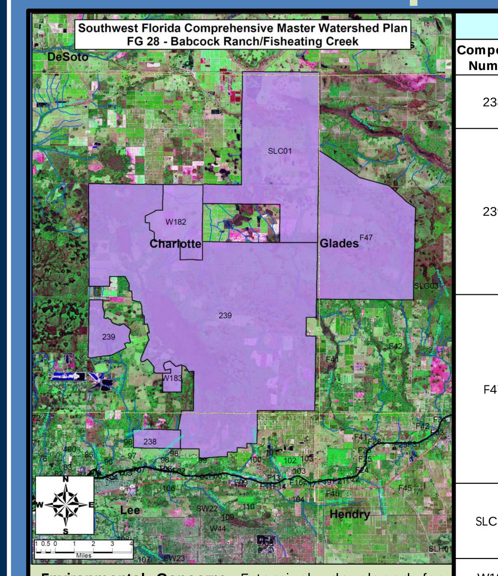


Functional Group 56- Yucca Pens

Component Number	Title	Description
53	Yucca Pens (Charlotte Harbor Flatwoods)	Provide a connection between Charlotte Harbor, Charlotte Harbor Buffer Preserve and the Babcock-Webb Wildlife Management Area. Key piece to establish landscape scale connection between Charlotte Harbor and Lake Okeechobee. Acquisition of the Caliente Springs DRI is a critical aspect.
60	Yucca Pens Buffer	Land acquisition, hydrologic restoration, habitat enhancement, and invasive exotic vegetation removal.
114	Southwest Unacquired Yucca Pens	Land acquisition, hydrologic restoration and invasive exotic vegetation control. The site contains borrow pits that could be used for sheet flow attenuation and cleaning of post mining turbidity.
115	Yucca Pen Mines	Land acquisition and restoration of a mining operation including the creation of littoral zones around the lakes.
116	Yucca Pen Creek West	Land acquisition, hydrologic restoration, habitat restoration, and invasive exotic vegetation removal. There is a potential for scrub jay mitigation at the site.
117	Hog Branch Headwaters	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
118	Yucca Pen Inholdings	Land acquisition, hydrologic restoration, habitat restoration, and invasive exotic vegetation removal.
119	Yucca Pen Inholding East	Land acquisition, hydrologic restoration, habitat restoration, and invasive exotic vegetation removal.
SW21	Gator Slough Storage Seepage Barrier along Gator Slough	Designed to reduce ground water and surface water drainage from Yucca Pens WMA to Gator Slough Canal.

Environmental Concerns: Much of the area is the Yucca Pens Unit of the Babcock-Webb WMA, but the surrounding lands and several inholdings have been extensively developed for agriculture. Water that used to enter the area from the northwest is now held to the north by Zemel Rd. and drained by the Gator Slough Canal which runs to the east of the FG and along the southern boundary carrying flows to the coast. As a result the FG is much dryer than in pre-development conditions exhibiting an abbreviated hydroperiod and significantly lowered groundwater levels. The altered hydrology has caused shifts in the vegetative community and has led to significant invasion by exotic vegetation, particularly Melaleuca and Brazilian pepper.

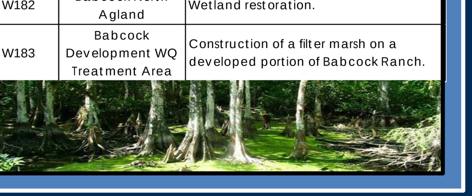
Functional Group 28



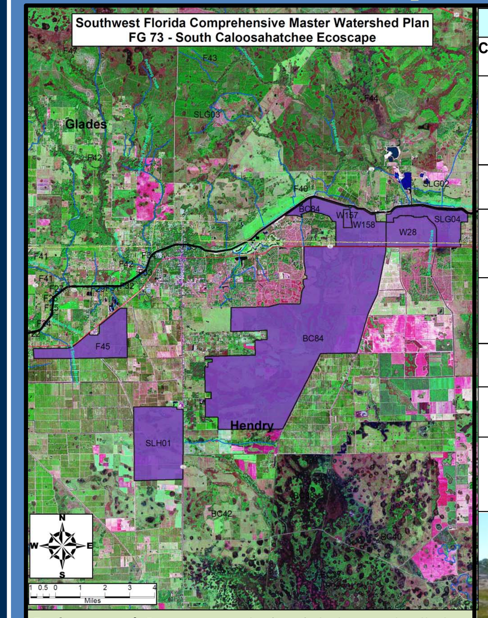
Environmental Concerns: Extensively developed for agriculture which has lead to channelization of flow for irrigation and drainage resulting in disruption of the natural hydrologic regime, lowering of the ground water table, loss of wetland and upland habitat, and water quality degradation, particularly in Telegraph Swamp and Creek. Additionally, the area is plagued by recreation overuse, suppression of natural fire regime, habitat fragmentation, and top soil erosion.

Functional Group 28 - Babcock Ranch Restoration

Component Number	Title	Description
238	Argo Property	Land acquisition, hydrologic restoration, habitat preservation, and invasive exotic removal.
239	Babcock Ranch	Berm and exotic removal, ditch fill, and restoration of agricultural lands for wetland restoration and water storage. The area is a priority one Strategic Habitat Conservation Area for the Florida Panther, Black Bear and other species of high interest for their degree of endangerment such as red cockaded woodpecker.
F47	Fisheating Creek	Exotic vegetation removal, canal filling, and hydrologic improvements to existing roads. Fisheating Creek is the only undammed tributary to Lake Okeechobee. This component will acquire certain rights from the owner to help preserve this natural land, which links the Okaloacoochee Slough, Babcock-Webb Wildlife Management Area, and Lake Okeechobee.
SLC01	Long Island Marsh	Land acquisition, road removal and/or culverting, ditch removal/plugging, exotic vegetation control, farm field restoration, and berm removal.
W182	Babcock North Agland	Wetland restoration.
W183	Babcock Development WQ Treatment Area	Construction of a filter marsh on a developed portion of Babcock Ranch.



Functional Group 73

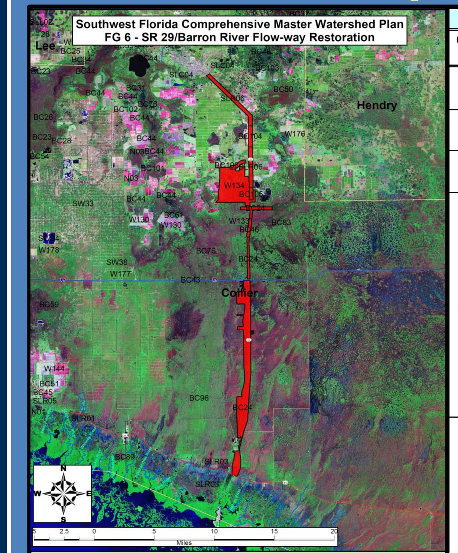


Environmental Concerns: Agricultural drainage via ditches and canals has eliminated the natural sheet flow, resulting in unnaturally high stages in downstream wetlands during the wet season and too little flow to these same wetland systems in the dry season. There is also the threat of conversion to residential development over the long term.

Functional Group 73- South Caloosahatchee Ecoscape

Component Number	Title	Description
BC84	Caloosahatchee Ecoscape	Restoration of hydrologic connectivity by enlarging openings under SR 80 and restoring the remaining areas to pre-development conditions.
F45	C-43 Reservoir WQ Treatment	Construction of a filter marsh.
SLG04	Long Hammock Slough	land scquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
SLH01	Hunt Club	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
W157	Goodno MAPS	Construction of an algal turf scrubber to help improve water quality.
W158	Goodno WQ Treatment Area	Construction of a water treatment area to help improve water quality.
W28	Boma WQ Treatment Area	Construction of a wetland to improve water quality in the Caloosahatchee Ecoscape.

Functional Group 6

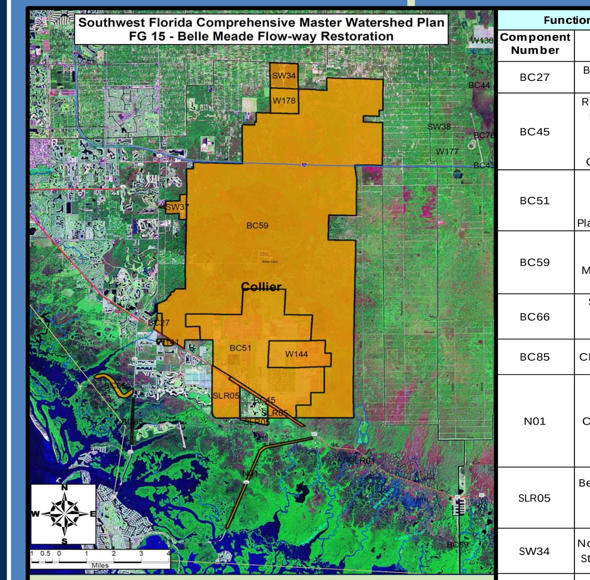


Environmental Concerns: Overdrainage associated with the SR 29 canal and loss of natural flows through the Florida Panther National Wildlife Refuge (FPNWR), Fakahatchee Strand State Preserve FSSP, Big Cypress National Preserve (BCNP), and Everglades National Park ENP. The canal has resulted in groundwater drainage in adjacent lands and impacts to the native vegetative community. Wildlife mortality is also a major concern in this area due to high speed traffic on SR 29.

Functional Group 6- SR 29 Barron River Flow-way

Component Number	Title	Description
BC104	Wildlife Crossing/SR 29	Construction of wildlife crossings at key locations.
BC105	Wildlife Crossing/SR 29	Construction of wildlife crossings at key locations.
BC106	Wildlife Crossing/Oil Well	Construction of wildlife crossings at key locations.
BC24/W135	SR 29/Barron River Flow-way Restoration	Canal fill and construction of spreader canals/swales to rehydrate adjacent lands and prevent loss of water to tide. Culverting along SR29 to restore hydrologic connectivity along State Road 29 beginning approximately 5 miles south of Immokalee at Owl Hammock and end at the intersection of the SR 29 / Barron River Canal and US 41.
BC46/W135	Florida Panther National Wildlife Refuge Okaloacoochee Slough Hydrologic Restoration	Restoration of Okaloacoochee Slough's flow into the Florida Panther National Wildlife Refuge through dredging, culverting, and construction of a water control structure systems in the section of the SR 29/Barron River Canal adjacent to the Refuge to raise canal water levels adjacent to refuge.
SLR06/W184	SR 29/Barron River Water Control	Placement of a series of weirs at one foot or half foot contour, and culverting.
W134	Mud Lake Strand	Lower Mud Lake flowway restoration to treat flow prior to entry into Panther Refuge.

Functional Group 15

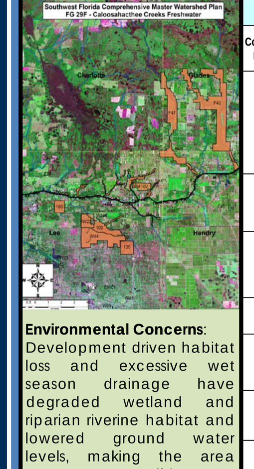


Environmental Concerns: Remaining natural flow-ways in the north empty into the canals associated with the agricultural fields to the south, altering the volume, timing and duration of freshwater flows to the receiving estuaries. The area has been over drained as a result of the extensive Golden Gate, CR 951 and I-75 canal system. Major roads have severed tidal connections. The area is classified as critical habitat for over 80 listed species.

Functional Group 15- Belle Meade Flow-way Restoration

Component Number	Title	Description
BC27	Bone Fish Springs Acquisition	Land acquisition, bank stabilization, and exotic removal.
BC45	Route 41 Culvert Emplacement west of the Tamiami Trail Culverts Project	Installation of culverts and earthen canal plugs along a 5-mile section of the Tamiami Trail that extends northwestward from State Road 92 to County Road 951.
BC51	Belle Meade Stormwater Master Plan/Central Flow-	Acquisition, culverting, agricultural land restoration, berm and road removal, spreader swale construction, and invasive exotic removal.
BC59	South Belle Meade Flow-way	Acquisition, culverting, agricultural land restoration, berm and road removal, spreader swale construction, and invasive exotic removal.
BC66	Shell Island Rd. Culvert Installation	Land acquisition, culverting and ditch plugging.
BC85	CR 951 Culverting	Spoil removal /breaching and exotic plant species control.
N01	CR 92 Culverting	Construction of additional culverts under CR 92 to improve hydrologic exchange, and in other areas where pre-existing culverts have failed. Portions of the roadway canal may also be plugged or backfilled.
SLR05	Belle Meade Flow-way south of Tamiami Trail	Flowway restoration including, culverting, spreader swales, fan swales, agricultural land restoration, berm removal, and road removal.
SW34	North Belle Meade Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
SW37	Henderson Creek Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
W141	Henderson Creek MAPS	Construction of an Algal Turf Scrubber (ATS).
W144	Belle Meade WQ Treatment Area	Construction of a water quality treatment area (WQTA) on the Belle Meade Flowway Restoration site.
W178	North Belle Meade WQ Treatment Area	Co-location of a WQTF with an above ground reservoir (SW34) along former strand.

Functional Group 29F

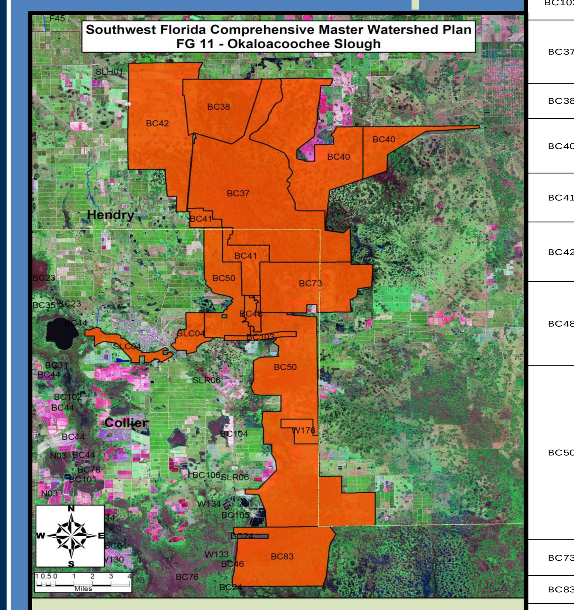


Environmental Concerns: Development driven habitat loss and excessive wet season drainage have degraded wetland and riparian riverine habitat and lowered ground water levels, making the area more susceptible to drought, fire, and invasion by exotic vegetation. Water quality has also been degraded primarily as a result of non-point source pollutants associated with local landuse.

Functional Group 29F- Caloosahatchee Creeks Freshwater

Component Number	Title	Description
99	Unnamed Creek at Caloosahatchee State Recreation Area	Invasive exotic removal, restoration of bank type, and removal of hydrologic impediments in the southern end of the property. A canoe launch with trail could be built in conjunction with the State Recreation Area.
100	Cypress Creek Corridor	River corridor repairs such as invasive exotic removal, restoration of bank type, and removal of hydrologic impediments.
101	Spanish Creek/Four-Corners Restoration	Acquisition, hydrologic restoration, isolated wetland restoration, cypress slough restoration and invasive exotic vegetation control.
102	SFWMD Four-Corners Property	Construction of a stormwater treatment area to improve water quality.
103	County-line Unnamed Creek	Acquisition, river corridor repairs such as exotic removal, restoration of bank type, and removal of hydrologic impediments.
104	Bedman Creek Corridor	River corridor repairs such as exotic removal, restoration of bank type, and removal of hydrologic impediments.
105	Hickey Creek Headwaters	River corridor repairs such as invasive exotic removal, restoration of bank type, removal of hydrologic impediments, and restoration of a more natural native upland and wetland mix.
106	Hickey Creek Swamp	Acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
109	Hickey Creek Cypress Swamps	Acquisition, hydrologic restoration, habitat restoration, and invasive exotic vegetation removal in association with Hickey Creek Canal.
110	Hickey Creek Canal	River corridor repairs such as invasive exotic removal, restoration of bank type, removal of hydrologic impediments, and creation of a wider, meandering cross-section with littoral zones.
F01-F35	Caloosahatchee Oxbows	Developing comprehensive restoration and shoreline treatment plans as required at 35 different location along the freshwater portion of the Caloosahatchee River.
F41	Jacks Branch	Acquisition, hydrologic restoration, habitat enhancement, and invasive exotic vegetation removal.
F42	Bee Branch	River corridor repairs such as exotic removal, restoration of bank type, and removal of hydrologic impediments.
SW02	Freshwater Caloosahatchee Southeast Ag Water Containment Area	The component is designed to increase capacity of agricultural detention areas.
SW03	Albritton/Hilliard/Palmer Ag Property	Wetland restoration on existing agricultural lands. The component is designed to increase capacity of agricultural detention areas.
SW04	Freshwater Caloosahatchee Northeast Ag Water Containment Area	The component is designed to increase capacity of agricultural detention areas.
SW05	Freshwater Caloosahatchee Southwest Ag Water Containment Area	The component is designed to increase capacity of agricultural detention areas.
SW22	Hickey Creek Storage Reservoir	Construction of an above ground storage reservoir designed to capture wet season canal flows for release during the dry season.
W162	Hickey Creek MAPS	Construction of an Algal Turf Scrubber (ATS) to help improve water quality.
W164	SFWMD Four-Corners Property MAPS	Construction of an Algal Turf Scrubber (ATS).
W44	Greenbriar Centralized Wastewater	Construction of a centralized wastewater treatment and re-use system in Lehigh Acres.

Functional Group 11

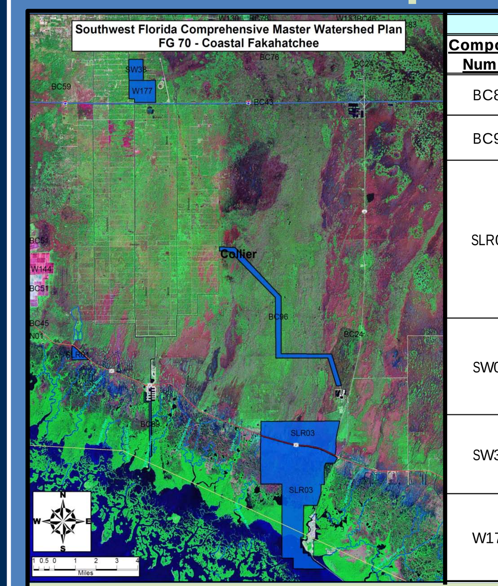


Environmental Concerns: Agricultural drainage via ditches and canals has eliminated the natural sheet flow, resulting in unnaturally high stages in downstream wetlands during the wet season and too little flow to these same wetland systems in the dry season. There is also the threat of conversion to residential development over the long term.

Functional Group 11- Okaloacoochee Slough

Component Number	Title	Description
BC103	Wildlife Crossing/ Immokalee Road East	Construction of wildlife crossings at key locations.
BC37	Okaloacoochee Slough Wildlife Management Area Hydrologic Restoration	Property acquisition, ditch removal, restoration of agricultural plots and old field habitat, wetland restoration, and exotic vegetation removal.
BC38	Okaloacoochee Slough C1 and C2 Hydrologic	Ditch removal, exotic vegetation control, prescribed burn, and native replanting.
BC40	Okaloacoochee Slough Alico Property Acquisition East	Property acquisition, ditch removal, restoration of agricultural plots and old field habitat, wetland restoration, and exotic vegetation removal.
BC41	Okaloacoochee Slough Alico Property Acquisition	Acquisition, ditch removal, exotic control, prescribed burn, and native replanting.
BC42	Twelve Mile Slough Acquisition	Acquisition, hydrologic restoration, invasive exotic vegetation control, and plugging of the canal that runs along railroad grade on the west side of component site.
BC48	Rural Lands R1 Wading Bird	These areas are in close proximity to FFWCC identified rookery and are suitable for hydrologic restoration by removal of drainage improvements and or some topographic alteration. These areas are still being utilized for pasture.
BC50	Okaloacoochee Slough Flow-way from the Caloosahatchee River to the Big Cypress Swamp	The Collier County portion of this flowway has been included in its Rural Lands Assessment Area, which is designed to allow willing landowners to sell or trade development rights within the flowway. This would allow these lands to either be managed at their current level of agricultural production or restored to a more natural landscape depending upon the amount of compensation they received for a particular parcel. Other portions of the flowway are being or have been acquired.
BC73	Half Circle L Ranch	Acquisition, ditch removal, pasture and agricultural plot reclamation, and exotic vegetation removal.
BC83	Bear Island Road Network	Removal of roads and backfilling or plugging the canals and ditches.
SLC04	Immokalee Connector	Acquisition, culverting, road removal, berm removal, ditch filling and removal of any features impeding flowways. Other restoration would involve farm field restoration and exotic vegetation removal.
SW06	Okaloacoochee Slough Ag Water Containment Area	Capture wet season canal flows on private lands for release during the dry season.
W176	Okaloacoochee Slough WQ Treatment Area	Construction of a Water Quality Treatment Area.

Functional Group 70

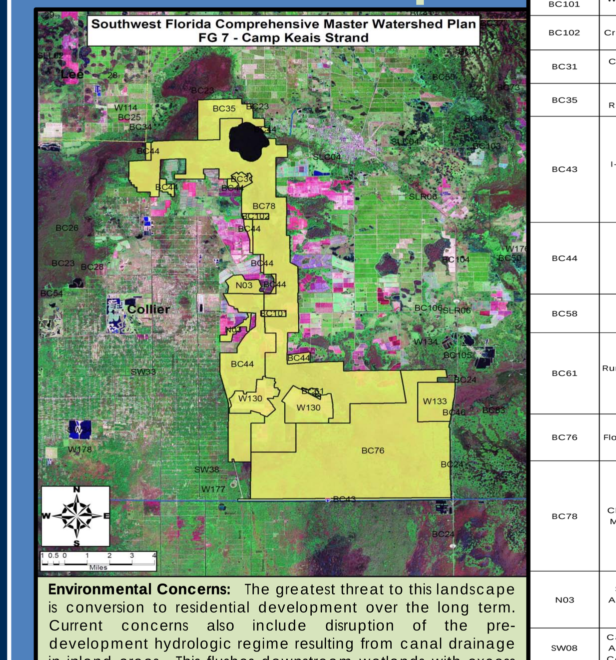


Functional Group 70- Coastal Fakahatchee

Component Number	Title	Description
BC89	Faka Union Hydrologic	Spoil removal /breaching and exotic plant species control.
BC96	Janes Scenic Drive Culverts	Increase culverting along Janes Scenic Drive (55000 ft.).
SLR03	Fakahatchee Strand/Ten Thousand Islands Connector	Acquisition and restoration of the identified area; railroad tram removal and/or culverting/ breaching, ditch removal/plugging, exotic vegetation control, farm field restoration, airboat trail restoration, and berm removal.
SW09	Eastern North Golden Gate Estates Canal/Weir Improvements	Construction of a new weir.
SW38	Picayune Strand Storage Reservoir near I-75	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
W177	Picayune Strand at I-75 WQ Treatment Area	Co-located Water Quality Treatment Area with the Flows to the Coast Reservoir components along former strand.

Environmental Concerns: A canal and adjacent berm between Copeland and Everglades City is causing drainage, allowing saltwater intrusion into the brackish marshes, and altering surface flows in the southeast corner of the surrounding natural area. There is extensive salt marsh damage caused by various airboat operations. Old logging trams and a defunct railroad yard are impeding sheetflow through the area and encouraging recruitment of exotic species. Residential and agricultural development upstream of the Picayune Strand Restoration Project (PSRP) will continue to dump excessive amounts of water during wet periods onto the PSRP area to maintain current levels of drainage in North Golden Gate Estates (NGGE) and in agricultural lands to the east of NGGE. This will make the PSRP area somewhat wetter than under pre-development conditions during wetter periods and drier during dry periods compared to pre-development conditions.

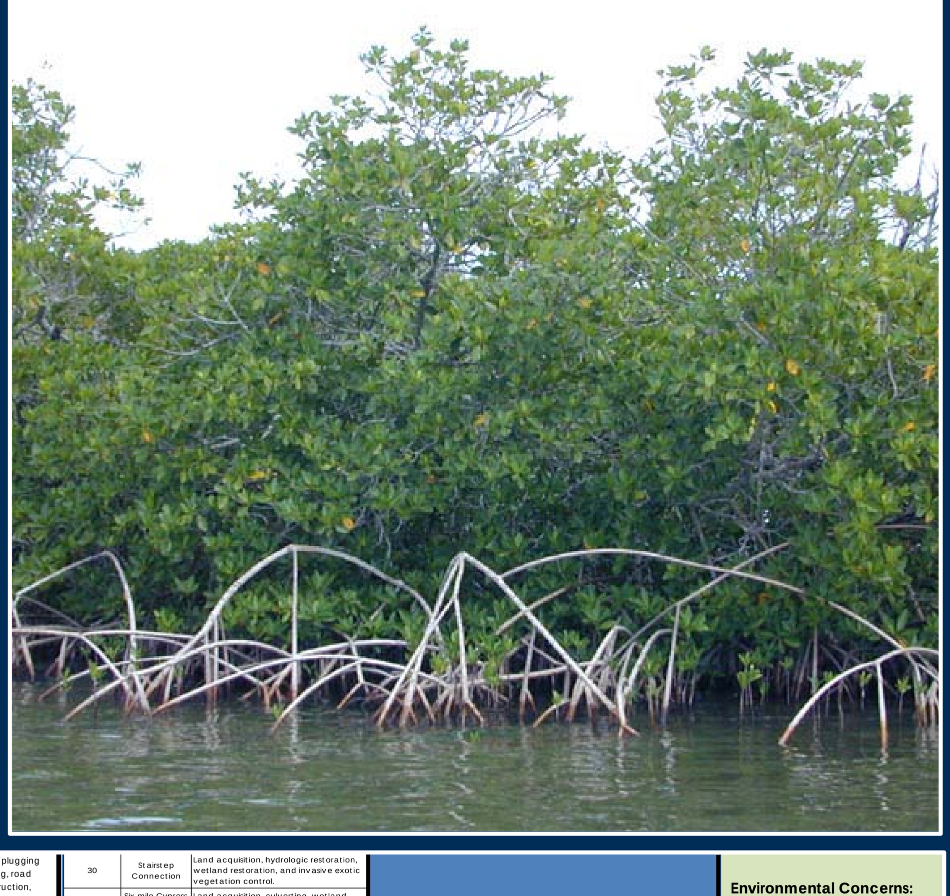
Functional Group 7



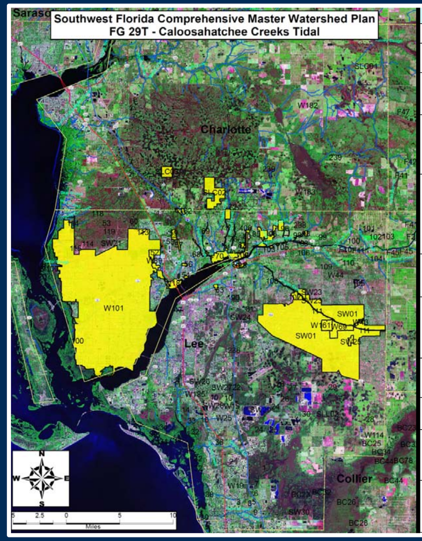
Environmental Concerns: The greatest threat to this landscape is conversion to residential development over the long term. Current concerns also include disruption of the pre-development hydrologic regime resulting from canal drainage in inland areas. This flushes downstream wetlands with excess flows in the wet season and severely reduced flows in the dry season. Pre-development flow-ways have been lost to canal channelization and the disrupted hydrology has encouraged invasion of exotics.

Functional Group 7- Camp Keais Strand

Component Number	Title	Description
BC101	Wildlife Crossing/Oil Well Road West	Construction of wildlife crossings at key locations.
BC102	Wildlife Crossing/Immokalee Road West	Construction of wildlife crossings at key locations.
BC31	Camp Keais Marsh Restoration	Additional hydrologic restoration of the marsh and control of invading willow and myrtle.
BC35	CREW/Pepper Ranch Acquisition	Acquisition of the Pepper Ranch and hydrologic restoration to restore sheetflow and improve water quality.
BC43	I-75 Panther NWR Canal Plugs	Design, permitting, and construction of a water control system on the section of the I-75 Canal that runs along the southern border of the Florida Panther National Wildlife Refuge. The water control system will be used to restore/improve hydrologic conditions on the refuge by raising canal water levels adjacent to refuge.
BC44	Camp Keais Extension	Removal of spoil berms, backfill/plugging ditches, agricultural weir removal/refitting, road culverting, pasture/agricultural land restoration, filter marsh construction, and invasive exotic vegetation removal.
BC58	Rural Lands R2 Wading Bird	Removal of invasive plant species from wetlands and restoring agricultural sites to native marsh habitat.
BC61	Rural Lands R2 Other Listed Species	Improvements to pasture areas to increase utilization by Caracara and burrowing owls. Proposed management should also improve forage value for deer in close proximity to Florida Panther Wildlife Refuge. These areas will still be utilized for pasture.
BC76	Florida Panther NWR	Wetland restoration in the northern section for water storage and treatment prior to entering Panther Habitat.
BC78	CREW/Camp Keais Marsh Restoration	Restore the historic flowway from Lake Trafford through the Eastern Corkscrew Swamp, Camp Keais to the Florida Panther National Wildlife Refuge through removal of spoil berms, backfill/plugging ditches, agricultural weir removal/refitting, road culverting, pasture/agricultural land restoration, filter marsh construction, and removal of exotic vegetation.
N03	Shaggy Cypress Addition to Camp Keais Strand	Acquisition and restoration of the Shaggy Cypress lands including road removal and/or culverting, ditch removal/plugging, berm removal, and exotic vegetation control.
SW08	Camp Keais Strand Agricultural Water Containment Area	Increase capacity of agricultural detention areas.
SW39	Immokalee South Rural Lands Reservoir	Above ground reservoir to capture wet season canal flows for release during the dry season.
W130	Camp Keais WQ Treatment Area	Construction of a water treatment area to help improve the flowway and improve water quality.
W133	Florida Panther NWR Wetland	Restore wetlands to treat flow prior to entering Panther Habitat.



Functional Group 29T

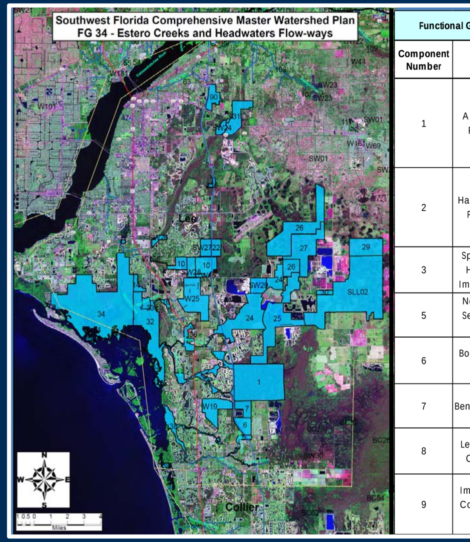


Functional Group 29T- Caloosahatchee Creeks Tidal

Component Number	Title	Description
47	Manuals Branch Shoreline	Construct a filter marsh east of Cortez Road to improve water quality for the park.
52	Hancock Creek Riverine Corridor	Land acquisition, hydrologic restoration by improving weirs, habitat restoration, and invasive exotic vegetation removal.
54	Old Bridge Point	Wetland restoration, shoreline restoration, and construction of filter marsh at the previously owned FDOT property, at the connection of the Caloosahatchee River and Powell Creek Bypass Canal.
55	Lower Powell Creek Marshes	Restoration of west shoreline of Powell Creek and east shoreline from Harbor Estates to Electric Lane through acquisition, hydrologic restoration, wetland restoration, culverting sections of Brooks Road to improve flow, and invasive exotic vegetation control.
56	Royal Palm Estates	Land acquisition, hydrologic restoration through berm and ditch removal, wetland restoration, and invasive exotic vegetation control.
57	Zemel Grade/Powell Creek	Restoration of old railroad grade connecting Little Ranches to the Powell Creek Bypass Canal including ditch removal/plugging, exotic vegetation control, and berm removal.
59	Gatorland Vistas (Addition to Prairie Pine	Borrow pit restoration by creating a littoral shelf, reshaping the borrow pit and stocking it with bass and other fresh water fish.
61	Reinke Property	Land acquisition, hydrologic restoration and invasive exotic vegetation control
62	Stolle Property	Land acquisition, hydrologic restoration of a flowway, construction of a wildlife crossing, wetland restoration, and invasive exotic vegetation control.
63	Alliance of Casa La Linda	Land acquisition, hydrologic restoration through berm removal and weir replacement, invasive exotic vegetation control, and possibly a filter marsh.
68	West Branch Daughtreys Creek	A series of in-creek restorations including removal of an agricultural weir, reconnecting the creek profile at road blockages, culvert replacement on Bayshore Road, and invasive exotic vegetation control.
69	East Branch Daughtreys Creek	Hydrologic improvements to existing marsh system including maintaining flow way, invasive exotic removal, and floodplain preservation to reduce encroachment.
70	Caloosahatchee Creeks	Creek restoration, culvert construction, wetland restoration, and invasive exotic control.
71	Popash Creek Corridor	Acquire and restore creek by exotic removal and creek bank restoration. Improve road crossing culverts. Popash Creek headwaters owned through Conservation 2020 #206.
72	Popash Creek Headwaters/ Lee	Land acquisition, better culverting, creek bank restoration, wetland restoration, and invasive exotic vegetation control.
76	Stroud Creek	Land acquisition, hydrologic restoration of a flowway, wetland restoration associated with a creek, and invasive exotic vegetation control.
77	Northwest Thompson Cutoff	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
80	J. Naumann Property	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
81	Thompson Cutoff Northeast	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control. Possibly construct a filter marsh from Palm Creek along the power line easement.
82	Palm Creek	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
83	FPL North Transmission Line Filter	Construction of a filter marsh along the powerline easement.
84	Bayshore Conservation Easement	Land acquisition, hydrologic restoration, habitat preservation, and invasive exotic removal.
85	Owl Creek	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
88	Mouth of Orange River	Land acquisition of mangrove islands, removal of spoil piles, wetland restoration, and invasive exotic vegetation control.
96	Trout Creek/Strickler Gulley Corridor	Creek corridor restoration: land acquisition depending on property ownership, exotic plant removal, any needed hydrologic restoration especially around SR 78, and water quality improvements around SR 78. The northern portion of the component footprint would be purchased with the acquisition of the the Babcock Ranch property.
97	Otter Creek Corridor	Restoration of a short creek system plus headwaters, specifically, creek bed and bank restoration and spoil pile removal.
98	Telegraph Creek Corridor	Land acquisition, hydrologic restoration, wetland restoration associated with a creek, creek bank and bed restoration, and invasive exotic vegetation control.
107	Harnes Marsh Expansion	Construction of a filter marsh or algal turf scrubber to help improve water quality.
108	Orange River Corridor	Riverine restoration without need for acquisition. Establishing submerged aquatic vegetation, removal of invasive exotic vegetation including Java plum, removing hydrologic impediments, including the Buckingham Road crossing.
111	Able Canal	Hydrologic restoration and possible filter marsh creation in association with gravel and sand pits east of Joel Blvd.
113	Yellow Fever Creek Headwaters	On the western boundary, install a weir to divert water into Yellow Fever Creek to restore base flows to the Yellow Fever Creek ecosystem, enhance minimum flows to the Caloosahatchee River, and reduce negative water quality impacts to Matlacha Pass. The restoration would improve salinity regimes for oyster recovery.
400	North Palm Creek Headwaters	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
SLC02	Daughtrey Branch Headwaters	Land acquisition, road removal and/or culverting, ditch removal/plugging, exotic vegetation control, farm field restoration, and berm removal.
SLC03	Powell Creek Restoration	Land acquisition, hydrologic restoration through berm and ditch removal, creek bank and bed restoration, wetland restoration, and invasive exotic vegetation control.
SW01	Orange River Canal/Weir Improvements	Construction of an improved weir system on the Orange River.
SW23	Orange River Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
SW25	Bell West Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
T01-T08	Tidal Caloosahatchee Oxbow #1	Developing comprehensive restoration and shoreline treatment plans as required at 8 different location along the tidal portion of the Caloosahatchee River.
W100	Cape Coral Spreader	Construction of a new spreader canal
W101	Cape Coral Canal	Construction of a weir system in coastal network of canals
W161	Lehigh Stormwater	Lehigh Acres Urban Stormwater Retrofits
W167	East Branch Daughtreys Creek MAPS	Construction of an Algal Turf Scrubber (ATS).
W181	North Fort Myers Centralized	Conversion to Centralized Sewer between Business 41 and US41 from Pondella to the Caloosahatchee.
W43	Lehigh Acres Country Club	Lehigh Acres Golf Course BMPs
W69	Lehigh Centralized Wastewater	Conversion of septic/package plants to central sewer - Lehigh Acres

Environmental Concerns: Extensive development and altered hydrologic regime in this area have resulted in significant ecological challenges brought about by recreation overuse, suppression of natural fire regime, ditching & draining, habitat fragmentation, shoreline hardening (loss of mangroves, intertidal zones), erosion, loss of organic soil, and channel dredging. Many of the urban areas are on septic systems significantly impacting ground water quality.

Functional Group 34



Functional Group 34- Estero Creeks and Headwaters Flow-ways

Component Number	Title	Description
1	Agripartners Properties	Preserve through acquisition and restore the site through exotic removal, and removal of hydrologic alterations, including unculverted power line road and enhancement of three borrow pits paralleling I-75.
2	Halfway Creek Flow-ways	Re-establish the north and south branch of Halfway Creek and the south branch of Estero River. Construction and replacement of connections at across I-75, US 41, and the railroad grade.
3	Spring Creek Hydrologic Improvement	Acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
5	North side of Section 25 in 4725	Construction of a filter marsh.
6	Bonita Springs Utilities	Acquisition, hydrologic restoration, habitat preservation, a potential filter marsh, and invasive exotic removal.
7	Benson Property	Acquisition, hydrologic restoration, habitat preservation, and invasive exotic removal.
8	Leitner Creek Connector	Acquisition, hydrologic restoration, creek bank restoration, marsh system expansion and invasive exotic vegetation control.
9	Imperial River Corridor Flow-way	Acquisition and hydrologic restoration of the flow-way, exotic vegetation removal and re-establishing native plants along the river.
10	Flow-way north of Alico Road (Alico Mine Flow-way) (Tam Alico)	Spoil berms removal, backfill/plugging ditches, weir removal/refitting, road culverting, filter marsh construction, restoring agricultural areas to original grade, invasive exotic vegetation removal, and smoothing the existing 90 degree bends to improve flow and habitat.
11	Lakes Park/Hendry Creek	Acquisition, hydrologic restoration, creek bank restoration, marsh system expansion and invasive exotic vegetation control.
14	Island Park Road/Hendry Creek Filter Marsh	Hydrologic restoration, filter marsh construction, and invasive exotic vegetation control.
16	Bluejack Oak Parcel	Acquisition, hydrologic restoration, habitat preservation, and invasive exotic removal.
22	Freeman	Hydrologic restoration, habitat restoration, and invasive exotic vegetation removal.
24	Alico Flow-ways West	Acquisition, hydrologic restoration, habitat preservation, and invasive exotic removal.
25	Alico Flow-ways East on Ginn Proposal	Acquisition, hydrologic restoration and invasive exotic removal.
26	Airport Expansion Flow-way	Acquisition, hydrologic restoration through ditch removal, and invasive exotic vegetation control.
27	Florida Rock Industries Flow-way Buffers	Road and spoil berm removal, ditch filling, weir removal/refitting, restoring agricultural areas to original grade, and invasive exotic vegetation removal.
29	Airport Mitigation Connector	Hydrologic restoration and invasive exotic removal and has high value as a landscape connector as it would establish a landscape connection between airport mitigation sites.
30	Stairstep Connection	Land acquisition, hydrologic restoration, wetland restoration, and invasive exotic vegetation control.
31	Six-mile Cypress Connection under SR 82	Land acquisition, culverting, wetland restoration, and invasive exotic vegetation control.
32	East Estero Bay Buffer	Exotic removal, mosquito control ditch removal, spoil removal, and restoration of high marsh, mangrove, and associated estuarine communities. The land is already acquired by State of Florida.
33	Mullock Creek Preserve	Exotic removal and mosquito control ditch restoration. The approximate acreage is 250.
34	North Estero Bay Buffer	Exotic removal, trash and hazardous waste cleanup, ditch restoration, and vehicle trail damage restoration to restore high marsh hydrology.
36	Estero River North	Hydrologic and habitat restoration with a potential water quality component such as a filter marsh. Southern portion includes riparian scrub habitat opposite Koreshan State Park, along the north bank of the Estero River.
38	Spring Creek Flow-way	Exotic removals, oyster bar restoration, and hydrologic improvements through ditch changes and potentially water control structure changes. Educational canoe trail, possibly named "Crocodile Trail."
39	Imperial River Preserve	Exotic removal, berm removal, and ditch restoration. The component is approximately 40 acres.
90	Six-Mile Cypress Headwaters West	Some acquisition, exotic plant removal, and construction of additional culverts under SR 82 to restore hydrologic connection to cypress domes within the area known as Six Mile Omni.
236	Addition to Six-Mile Cypress	Hydrologic restoration and invasive exotic removal.
SLL02	Green Meadows	Protection of valuable habitats including pine flatwoods, cypress, and open marshes. Road and spoil berm removal, ditch filling, restoring agricultural areas to original grade, and invasive exotic vegetation removal.
SW24	Six-mile Cypress Upper Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
SW26	Six-mile Cypress Lower Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
SW27	Freeman Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
SW28	Alico Road Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
SW29	Alico Flow-ways West Storage Reservoir	Above ground storage reservoir to capture wet season canal flows for release during the dry season.
W15	Alico Road MAPS	Construction of an Algal Turf Scrubber (ATS).
W185	Ten Mile Canal MAPS	Construction of an Algal Turf Scrubber (ATS).
W19	San Carlos Estates Centralized	Conversion of septic/package plants in sub-basin to centralized sewer in San Carlos Estates.
W25	San Carlos Park Centralized Wastewater	Conversion of septic/package plants in the sub-basin of San Carlos Park to centralized sewer.

Environmental Concerns: This area has been heavily urbanized due to its desirable location on the coast. It is characterized by residential and commercial expansion interspersed with preservation areas and agriculture. As of 2007, 28 percent (~20,000 acres) of wetlands in the watershed had been lost. All of these tidal creeks now exhibit altered hydrology due to development. Nutrient and pollutant laden water flows to the coast by way of Mullock Creek and Imperial River in unnatural pulses, sending excess freshwater to the estuary in the wet season and too little water in the dry season. Septic leakage has led to groundwater contamination and nutrification.