Appendix D:

Class 2 Wetlands Information

This appendix includes information regarding many of the Class 2 wetlands that were used for the analysis conducted in support of the 2025 Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP). All of the Class 2 sites located within the Southwest Florida Water Management District (SWFWMD) that were used in the current analysis are described in this appendix. However for sites located within the South Florida Water Management District (SFWMD) and the St. Johns River Water Management District (SJRWMD), the focus of this appendix is on sites that are included in the Data, Monitoring, and Investigations Team (DMIT) long-term wetlands monitoring program, since these sites are future Class 1 wetlands that will be included in the Class 1 wetlands dataset once enough water level data are available for future analyses conducted by the Environmental Measures technical working group in support of future RWSPs.

South Florida Water Management District Sites

Camp Lonesome 1 (DMIT-9)

Camp Lonesome is an Osceola County property established as a DMIT long-term monitoring site in 2019. The Camp Lonesome Ranch Conservation Area (Camp Lonesome) lies approximately two miles east of Canoe Creek Road and the Florida Turnpike in Osceola County. Accesses to the site currently exists via an unnamed road/drive running east/west from Canoe Creek Road and under the Florida Turnpike.

The large wet prairie/cypress system is a Plains wetland that was assessed in both January and June 2024 and was determined to be Stressed (**Figures D-1, D-2, and D-3**). This wet prairie has a small cypress area in the deeper section. There is a large ditch north of the wetland that appears to have slightly lowered the groundwater elevation on the north side wetland, as noted by the shift in vegetation on the north side compared to the south side. Osceola County regularly uses prescribed burns on the adjacent pine flatwoods to maintain the native community. The evaluation included pedestrian transects throughout the entire system.

Figure D-1. Location of Camp Lonesome (DMIT-9).

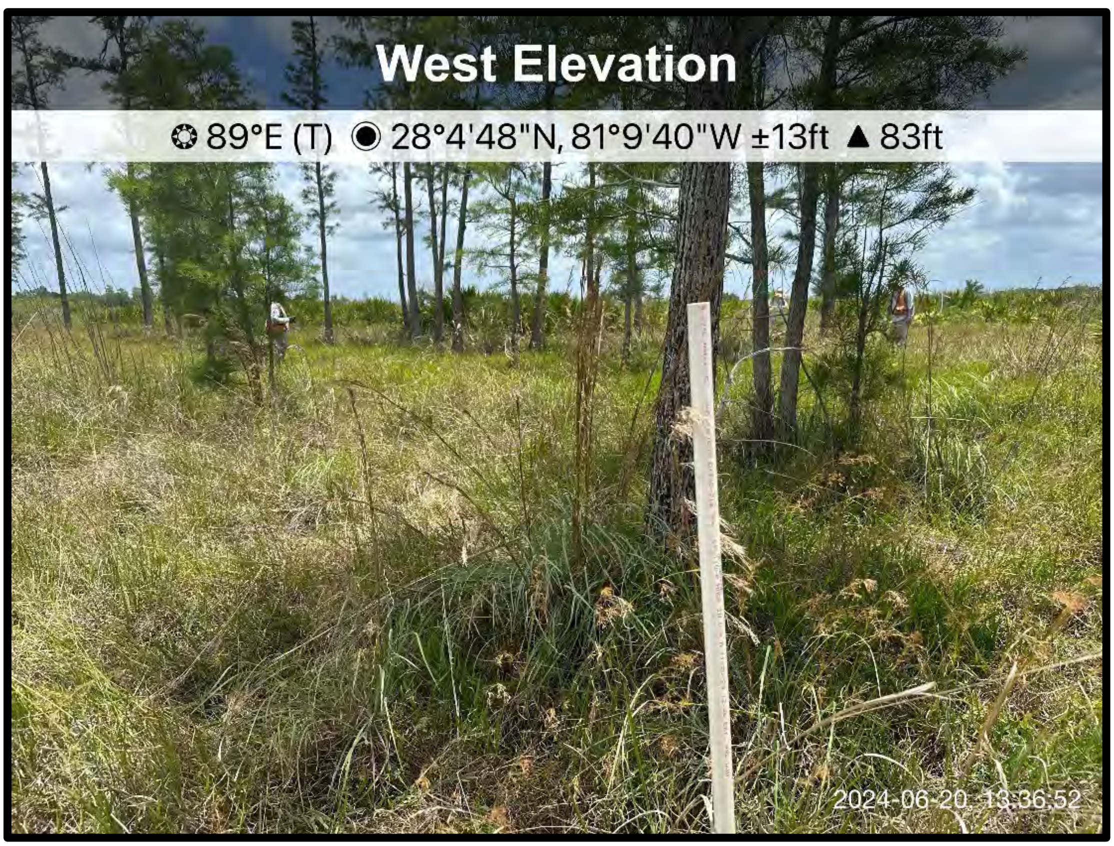

Figure D-2. Center cypress area of Camp Lonesome (DMIT-9), June 2024.

Figure D-3. Center cypress area of Camp Lonesome (DMIT-9) with Seasonal High Water Level shown, May 2019.

East Pine Island (DMIT-24)

East Pine Island is a Plains wetland that was established as a DMIT long-term monitoring site in 2018. The site is part of the Shingle Creek Management Area, which is owned and maintained the SFWMD. The site can be accessed through a SFWMD gate on the power line at the northern end of Tarragona Road.

The wet prairie and cypress slough adjacent to Shingle Creek were assessed in February and June 2023, and the site was determined to be Not Stressed (**Figures D-4, D-5, and D-6**). The evaluation included pedestrian transects along the east side of Pine Island. The SFWMD regularly uses prescribed burns on the adjacent pine flatwoods to maintain the native community.

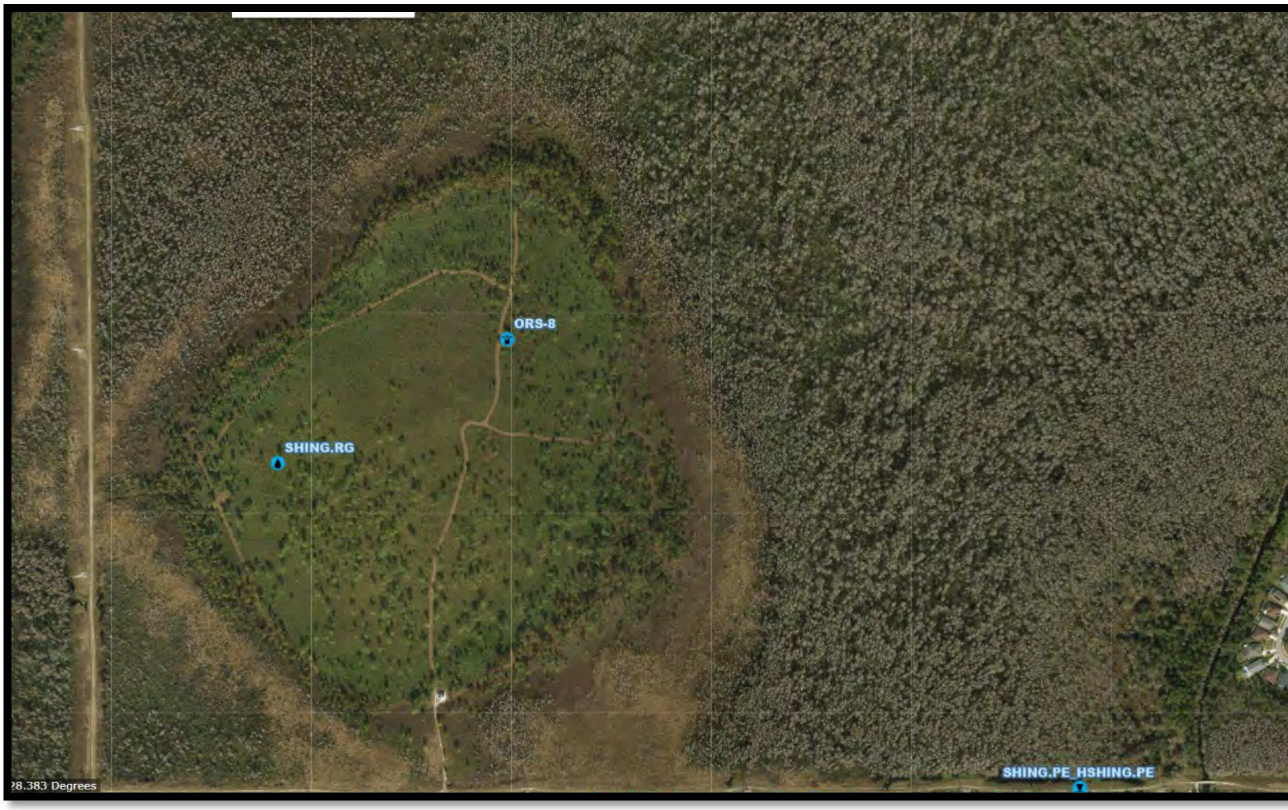

Figure D-4. Location of East Pine Island (DMIT-24).

Figure D-5. View of uplands from East Pine Island (DMIT-24), February 2023.

Figure D-6. Interior of wet prairie near transition to cypress in East Pine Island (DMIT-24), February 2023.

Lake Marion Creek East (DMIT-53)

Lake Marion Creek East is a Ridge wetland that was established as a DMIT long-term monitoring site in 2018. The site is located within the Lake Marion Creek Wildlife Management Area (WMA), which is owned and maintained by the SFWMD. The WMA is an 8,000-acre area located north and east of Lake Marion in Polk County. The site can be accessed through a SFWMD gate on Baltic Road.

The freshwater marsh was assessed in February 2023 and was determined to be Not Stressed (**Figures D-7, D-8, D-9 and D-10**). The evaluation included pedestrian transects throughout the entire system. The SFWMD regularly uses prescribed burns on the adjacent pine flatwoods/sandhill to maintain the native community.

Figure D-7. Location of Lake Marion Creek East (DMIT-53).

Figure D-8. Aerial photo (2023) of Lake Marion Creek East (DMIT-53).

Figure D-9. View from marsh into adjacent uplands at Lake Marion Creek East (DMIT-53), February 2023.

Figure D-10. View of freshwater marsh at Lake Marion East (DMIT-53), February 2023.

Snell 2 West (DMIT-120)

Snell 2 West is a Ridge wetland established as a DMIT long-term monitoring site in 2018. The site is located within SFWMD's Lake Marion Creek WMA, which is an 8,000-acre area located north and east of Lake Marion in Polk County. The site can be accessed through a SFWMD gate off of Cypress Parkway in Poinciana.

The site was assessed in February 2023 and was determined to be Not Stressed (**Figures D-11, D-12, and D-13**). The evaluation included pedestrian transects throughout the entire system. This Plains wetland is a cypress dome with a narrow edge of wet prairie along the perimeter. The SFWMD regularly uses prescribed burns on the adjacent pine flatwoods to maintain the native community.

Figure D-11. Location of Snell 2 West (DMIT-120).

Figure D-12. View from upland edge into cypress area at Snell 2 West (DMIT-120), February 2023.

Figure D-13. Wet prairie surrounding cypress at Snell 2 West (DMIT-120), February 2023.

Tibet Butler 1 (DMIT-121, Formerly SJ-ZJ3)

Tibet Bulter 1 is on Orange County and SFWMD property and was established as a DMIT long-term monitoring site in 2018. This Ridge wetland is contiguous with Lake Tibet Butler. The site can be accessed through the Tibet-Butler Preserve and is adjacent to the Visitor Center. The 440-acre Preserve was purchased by the SFWMD through the "Save Our Rivers" Program and is managed by Orange County Parks and Recreation.

This seepage wetland was assessed in June 2023 and was determined to be Not Stressed (**Figures D-14, D-15 and D-16**). It was also determined to be Not Stressed during the assessment conducted in support of the 2020 CFWI RWSP analysis. The evaluation included pedestrian transects along the established transects. The County regularly uses prescribed burns on the adjacent pine flatwoods to maintain the native community.

Figure D-14. Location of Tibet Butler 1 (DMIT-121).

Figure D-15. Landscape view up uplands at Tibet Butler 1 (DMIT-121), June 2023.

Figure D-16. Landscape view of interior of Tibet Butler 1 (DMIT-121), June 2023.

SUMICA 1 (DMIT-122)

This site is described in this appendix since it was included in the DMIT long-term wetlands monitoring program and established as a DMIT site in 2019 (**Figures D-17, D-18 and D-19**). However, it was not included in the Class 2 wetlands dataset. It is located east of Lake Wales and within the SUMICA preserve, the largest of Polk County's Environmental Lands. The preserve is jointly owned and maintained by the SFWMD and Polk County. Access to the site is from the parking lot along SR 60. Prescribed burns are conducted on the adjacent pine flatwoods to maintain the native community.

Figure D-17. Location of SUMICA 1 (DMIT-122).

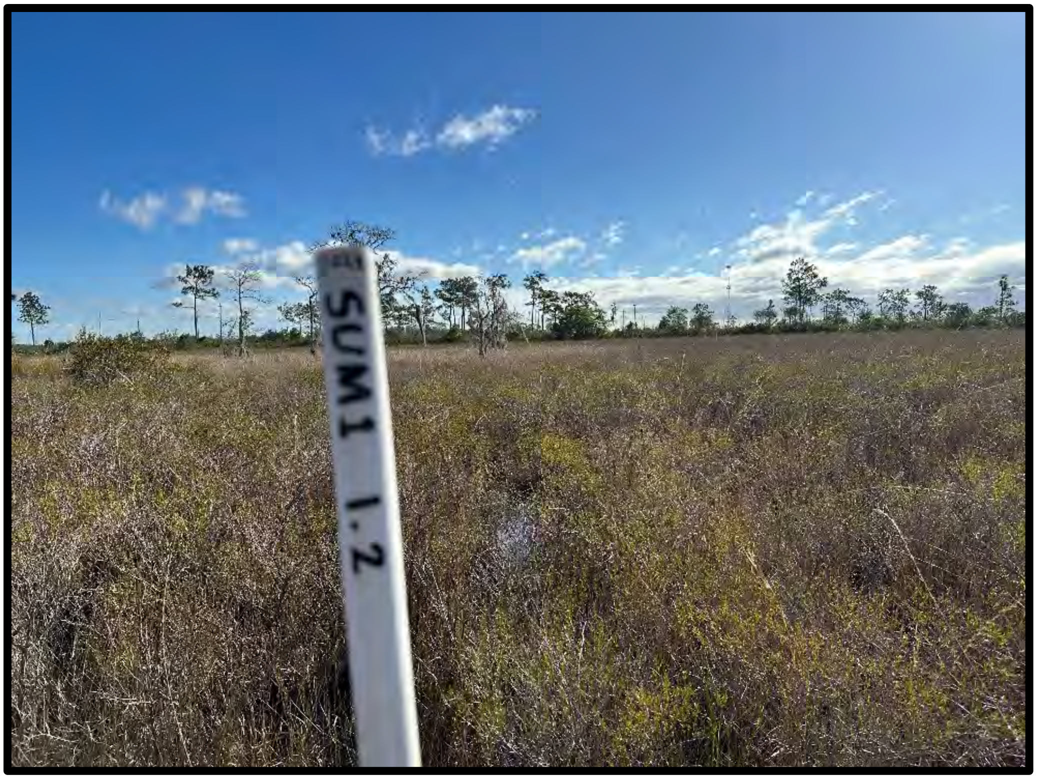

Figure D-18. Landscape view of wetlands of SUMICA 1 (DMIT-122), February 2024.

Figure D-19. Landscape view of uplands from SUMICA 1 (DMIT-122), February 2024.

Gardner Cobb (DMIT-125)

Gardner Cobb is a Plains wetland that is described here, since it was established as a DMIT long-term monitoring site in 2019 (**Figures D-20, D-21 and D-22**). However, it was not included in the Class 2 wetlands dataset. This marsh, which is surrounded by an oak hammock, is located just south of Lake Cypress within the Gardner-Cobb Marsh property that is the largest SFWMD-owned property in the Upper Chain of Lakes region. Access to the site is through a SFWMD gate off Lake Cypress Road and through the on-site trail system.

Lake Cypress is included in the Headwaters Revitalization Schedule, which will be implemented in phases to hold more water in Lakes Kissimmee, Cypress, and Hatchineha to allow historic flows to the Kissimmee River, while maintaining the same level of flood protection to achieve full restoration benefits. The first phase of the Headwaters Revitalization Schedule will raise the regulation schedule elevation approximately 0.5 ft. higher than the current regulation schedule in summer and winter. The new schedule commenced in 2024, and this may affect the water levels and wetland boundary in the marsh. Phased updates to the management plan will allow successively higher stages in the Headwaters Lakes (Lakes Kissimmee, Cypress, and Hatchineha) until approximately 2026, when the Headwaters Revitalization Schedule will be fully implemented.

Figure D-20. Location of Gardner Cobb (DMIT-125).

Figure D-21. View from uplands from Gardner Cobb (DMIT-125).

Figure D-22. Interior of marsh of Gardner Cobb (DMIT-125), May 2019.

Lake Marion Creek West (DMIT-130)

Lake Marion Creek West was established as a DMIT long-term monitoring site in 2018. This Plains wetland is located within the Lake Marion Creek WMA, which is owned and maintained by the SFWMD. The WMA is an 8,000-acre area located north and east of Lake Marion in Polk County. The site can be accessed through a District gate on Baltic Road then though the on-site trail system.

This seepage swamp was assessed in February 2023 and was determined to be Not Stressed (**Figures D-23, D-24, and D-25**). The evaluation included pedestrian transects throughout the entire system. The SFWMD regularly uses prescribed burns on the adjacent pine flatwoods/sandhill to maintain the native community.

Figure D-23. Location of Lake Marion Creek West (DMIT-130).

Figure D-24. Upland edge of Lake Marion Creek West (DMIT-130), June 2024.

Figure D-25. Seepage slope – Lake Marion Creek West (DMIT 130), June 2024.

Snell 1 East (DMIT-132, Formerly SF-WA)

Snell 1 East is a Ridge wetland that was established as a DMIT long-term monitoring site in 2018. This cypress dome, with a narrow edge of wet prairie along the perimeter, is located within the 8,000-acre Lake Marion Creek WMA, which is owned and maintained by the SFWMD. The WMA is located north and east of Lake Marion in Polk County. The site can be accessed through a SFWMD gate along Cypress Parkway in Poinciana, and there is a small parking area is along the road.

This wetland was assessed February 2023 and was determined to be Not Stressed (**Figures D-26, D-27, and D-28**). It was also determined to be Not Stressed in 2008 and 2018. The evaluation included pedestrian transects throughout the entire system. The SFWMD regularly uses prescribed burns on the adjacent pine flatwoods to maintain the native community.

Figure D-26. Location of Snell 1 East (DMIT-132).

Figure D-27. Interior of Snell 1 East (DMIT-132).

Figure D-28. Seasonal High Water Level for Snell 1 East (DMIT-132).

Camp Lonesome 2 (DMIT-188, Formerly SF-VC)

Camp Lonesome 2 is an Osceola County property established as a DMIT long-term monitoring site in 2019. The Camp Lonesome Ranch Conservation Area (Camp Lonesome) is located approximately two miles east of Canoe Creek Road and the Florida Turnpike in Osceola County. Accesses to the site currently exists via an unnamed road/drive running east/west from Canoe Creek Road and under the Florida Turnpike.

This Plains wetland is a large wet prairie/cypress system; it was assessed in January and June 2024 and was determined to be Not Stressed (**Figures D-29, D-30, D-31 and D-32**). The evaluation included pedestrian transects throughout the entire system. This site was also determined to be Not Stressed in 2010 and 2019. This system includes wet prairie and marsh with a cypress area in the deeper section. There is a large ditch north of the wetland that appears to have slightly lowered the groundwater elevation on the north side wetland as noted by the shift in vegetation on the north side compared to the south side Osceola County regularly uses prescribed burns on the adjacent pine flatwoods to maintain the native community.

Figure D-29. Location of Camp Lonesome 2 (DMIT-188).

Figure D-30. Upland edge of Camp Lonesome 2 (DMIT-188), June 2024.

Figure D-31. Hypericum fringe of Camp Lonesome 2 (DMIT-188), June 2024.

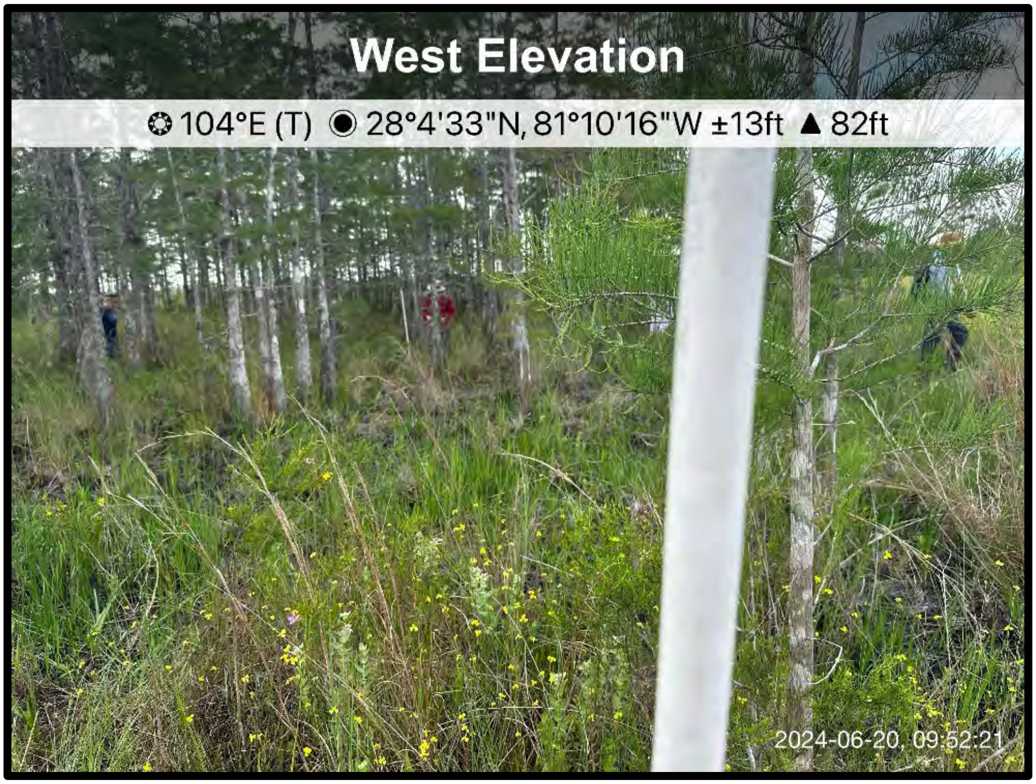

Figure D-32. Interior of cypress area of Camp Lonesome 2 (DMIT-188), June 2024.

SUMICA 2 (DMIT-189)

Since this site was established as a DMIT long-term monitoring site in 2019, SUMICA 2 is included in this appendix even though it was not included in the Class 2 wetlands dataset. This Plains wetland is located east of Lake Wales and is within the largest of Polk County's Environmental Lands, the SUMICA preserve (**Figures D-33, D-34 and D-35**). The property is jointly owned and maintained by the SFWMD and Polk County. Access to the site is from a SFWMD gate at the end of the parking lot along SR 60 then though the on-site trail system. The SFWMD and County regularly use prescribed burns on the adjacent pine flatwoods to maintain the native community.

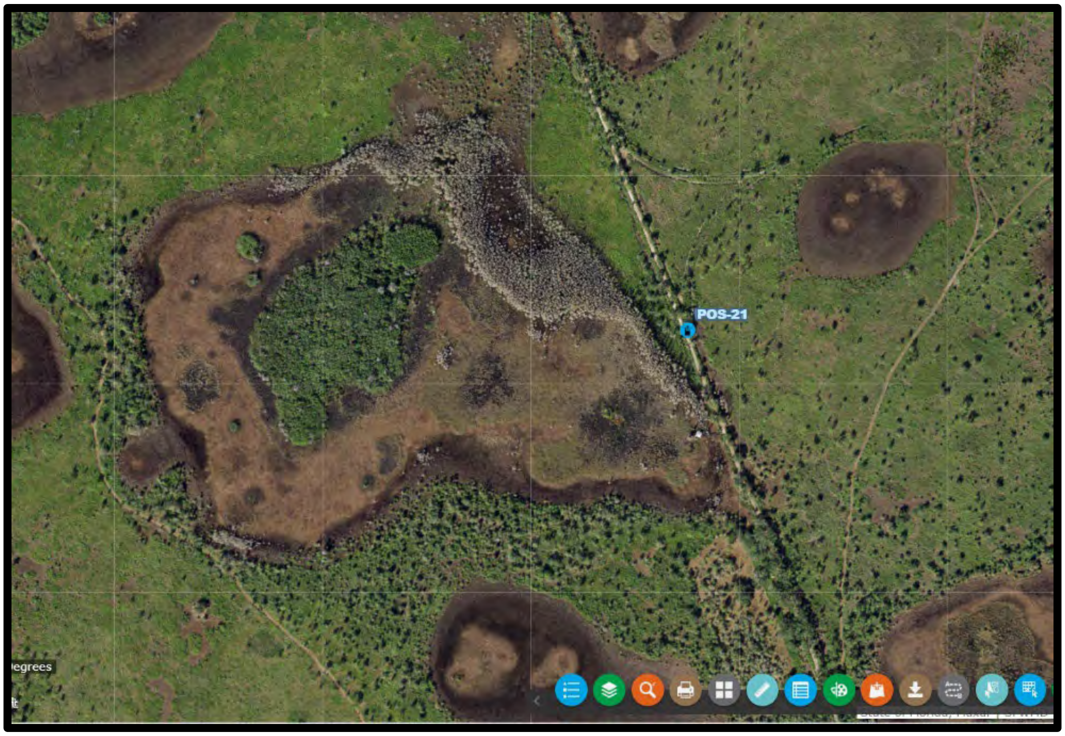

Figure D-33. Location of SUMICA 2 (DMIT-189).

Figure D-34. Palmetto edge into cypress of SUMICA 2 (DMIT-189).

Figure D-35. Palmetto edge into cypress of SUMICA 2 (DMIT-189).

St. Johns River Water Management District Sites

Little Big Econ State Forest Site 2 South (DMIT-4, Formerly SJ-0144)

Little Big Econ State Forest Site 2 South is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-36**). It was selected as a DMIT monitoring site, and transects were established on the northern and eastern sides of the wetland. Monitoring was initiated at the site in 2017, and the first 5-year monitoring event was conducted in 2022 (**Figure D-37**). Access to the site is through a gate with a combination lock at the Jones East Trailhead public parking area on Snow Hill Road.

Figure D-36. Location of Little Big Econ State Forest Site 2 South (DMIT-4).

Figure D-37. Little Big Econ State Forest Site 2 South (DMIT-4), July 2022.

Little Big Econ State Forest Site 1 North (DMIT-5, Formerly SJ-0143)

Little Big Econ State Forest Site 1 North is a Plains wetland; it was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-38**). The site was included in the DMIT long-term monitoring program, and transects were established on the northern side of the wetland in 2017. In 2022, the first 5-year monitoring event was conducted (**Figure D-39**). Access to the site is through a gate at the Division of Forestry Little Big Econ State Forest Equestrian Trailhead off of Snow Hill Road.

Figure D-38. Location of Little Big Econ State Forest Site 1 North (DMIT-5).

Figure D-39. Little Big Econ State Forest Site 1 North (DMIT-5), July 2022.

Bull Creek WMA North (DMIT-6, Formerly SJ-0045)

Bull Creek WMA North is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (Figure D-40). The site was selected as a DMIT monitoring location, and transects were established on the north, east, and west sides of the system. The site has been significantly impacted by damage from feral hog rooting during low-water periods (Figure D-41). Monitoring was established at the site in 2016, and the first 5-year monitoring event was conducted in 2021. Access to the site is through a gate along Crabgrass Road.

Figure D-40. Location of Bull Creek WMA North (DMIT-6).

Figure D-41. Bull Creek WMA North (DMIT-6), May 2021.

Bull Creek WMA South (DMIT-7, Formerly SJ-JI and SJ-0046)

Bull Creek WMA South is a Plains wetland; it was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP. This wetland was also determined to be Not Stressed in 2012 and 2018 (**Figure D-42**). The site was selected as a DMIT monitoring location, and transects were established on southwest, southeast, and central eastern sides of the wetland in 2016 (**Figure D-43**). The first 5-year monitoring event was conducted in 2021. Access to the site is along the loop road in the public access section of the Herky Huffman Bull Creek WMA. Notes that seasonal hunting activity occurs at this WMA.

Figure D-42. Location of Bull Creek WMA South (DMIT-7).

Figure D-43. Bull Creek WMA South (DMIT-7), May 2021.

Dixie Lake (DMIT-21, Formerly SJ-HO and SJ-0076)

Dixie Lake is a Ridge wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-44**). This lake is located withing Lake Louisa State Park and was also determined to be Not Stressed in 2012 and 2018**.** It was selected as a DMIT monitoring location, and transects were established on the northern, eastern, and southern sides of the system. Monitoring transects were established at the site in 2017, and the first 5-year follow up evaluation was conducted in 2022 (**Figure D-45**). Access to the site is through Lake Louisa State Park.

Figure D-44. Location of Dixie Lake (DMIT-21).

Figure D-45. Dixie Lake (DMIT-21), November 2022.

Lake Louisa Small Isolated (DMIT-50, Formerly SJ-JB and SJ-0077)

Lake Louisa Small Isolated is a Ridge wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP. This wetland was also Stressed in 2012 and 2018 (**Figure D-46**). It was selected as a DMIT monitoring location, and transects were established on the western side of the system in 2017. The first 5-year monitoring event was conducted in 2022 (**Figure D-47**). Access to the site is through Lake Louisa State Park.

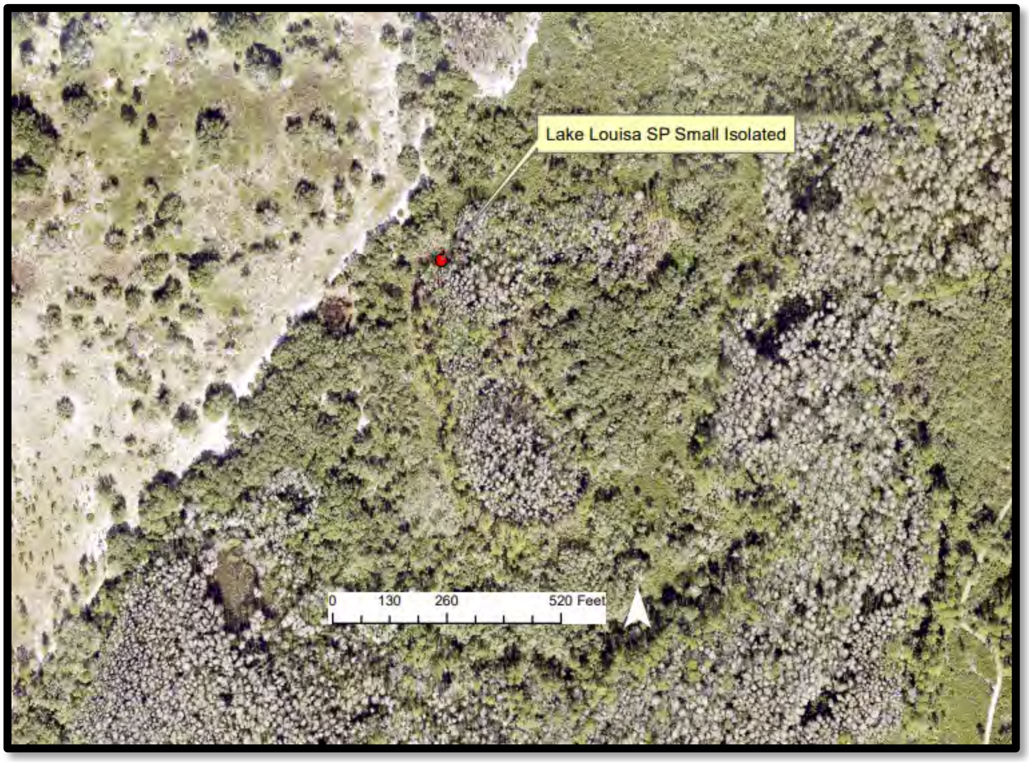

Figure D-46. Location of Lake Louisa State Park Small Isolated (DMIT-50).

Figure D-47. Lake Louisa State Park Small Isolated (DMIT-50), November 2022.

Prevatt Lake (DMIT-55, Formerly SJ-0069)

Prevatt Lake is a Ridge wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-48**). It was included in the DMIT long-term wetlands monitoring program. Transects were established on the eastern side of the system in 2022 (**Figure D-49**). Access to the site is through the Wekiwa Springs State Park.

Figure D-48. Location of Prevatt Lake (DMIT-55).

Figure D-49. Prevatt Lake, April 2022.

Lake Proctor (DMIT-56, Formerly SJ-0011)

Lake Proctor is a Plains wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-50**). It was selected as a DMIT monitoring location, and transects were established on the southwest, east central, and northeastern sides of the system. Monitoring was initiated on the site in 2016, and the first 5-year event was conducted in 2021 (**Figure D-51**). Water levels at the site were significantly higher in 2021 as compared to 2017, and many of the pines that had encroached into the wetland had died. It is likely that if water levels continue to remain high, this wetland may change from Stressed to Not Stressed in the future. Access to the site is through the combination lock gates at the Lake Proctor Wilderness Area off of SR 46. There is also a public access hiking trail that extends around the perimeter of the lake.

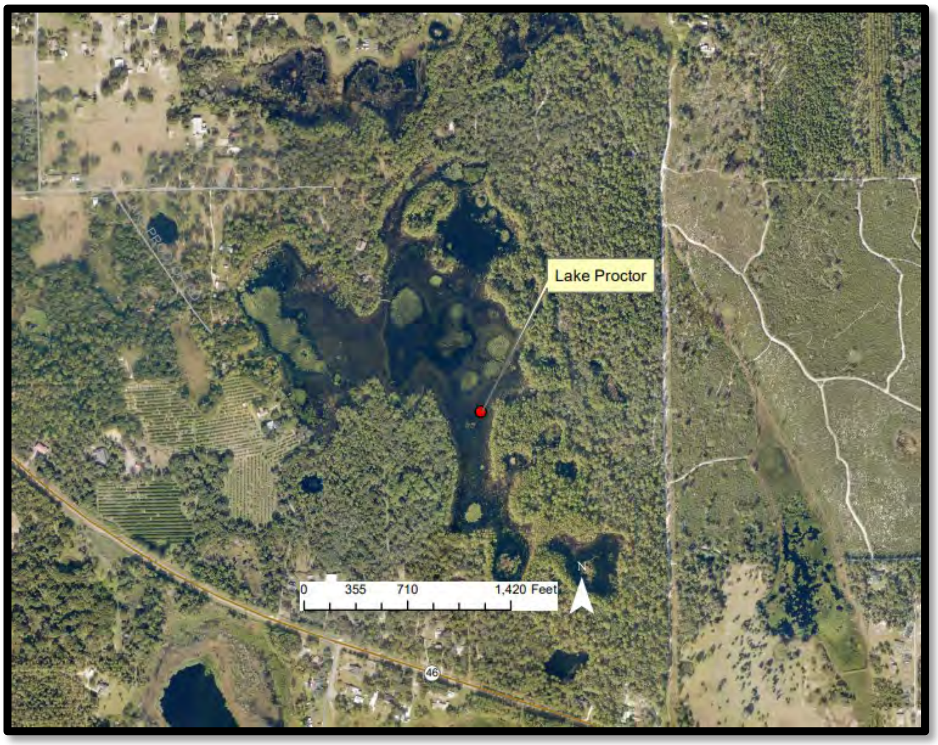

Figure D-50. Location of Lake Proctor (DMIT-56).

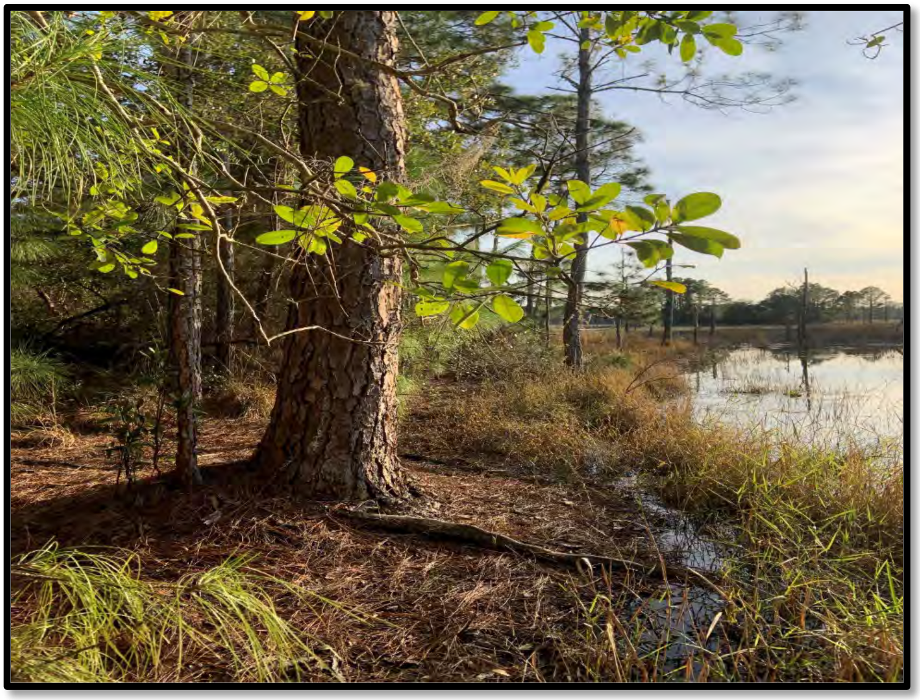

Figure D-51. Lake Proctor (DMIT-56), January 2021.

Sunset Lake (DMIT-58, Formerly SJ-IB or SJ-0008)

Sunset Lake is a Ridge wetland; it was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-52**). It was also Stressed in 2012 and 2018. The site was included in the DMIT long-term wetlands monitoring program, and transects were established on the northern side of the system in 2016. In 2021, the first 5-year monitoring event was conducted (**Figure D-53**). The vacant property along the northern side of the lake where transects were established may have been a historic dumping area, since buried debris and glass have been observed on each of the transects. Access to the site is off of South Sunset Avenue, just south of SR 50.

Figure D-52. Location of Sunset Lake (DMIT-58).

Figure D-53. Sunset Lake (DMIT-58), May 2021.

Prairie Lake (DMIT-86, Formerly SJ-GA)

Prairie Lake is a Ridge wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP. It was also Stressed in 2012 and 2018. Monitoring of this wetland system is conducted by Orlando Utilities Commission (OUC), as part of the wetland monitoring program established by their Consumptive Use Permit (CUP), and access to the lake is through Prairie Lake Park off of Hackney Prairie Road (**Figure D-54**). Although there were periodic gaps, the water level data collected for Prairie Lake from 2009-2017 provided a more consistent set of observations than the dataset selected for the current analysis. The water level data from 2015 through 2022 were determined not to be representative of groundwater-dominated wetlands within the CFWI Planning area. Therefore, this site was removed from the Class 1 wetlands dataset but included in the Class 2 wetlands dataset.

Prairie Lake was included in the DMIT long-term wetlands monitoring program, and transects were established on the northwest and southern sections of the lake. Indicators of stress included encroachment of upland species into wetland areas, observed stressed condition of wetland plant species, and hydrologic indicators observed within the soil at elevations lower than anticipated (**Figure D-55**). An evaluation of the water level data during the extended low-water period in the lake from 2011 through 2017 resulted in an abnormal distribution of frequency of water level differences from Wetland Edge Reference Elevation, as compared to other Ridge wetlands in the Class 1 wetlands dataset. Current lake conditions include extremely high water levels, which has been the case for the past 5 years. High water levels at or above the observed seasonal high for the lake have impacted the ability to collect water level data and have resulted in closure of the public dock for safety concerns.

Figure D-54. Location of Prairie Lake (DMIT-86).

Figure D-55. North shore of Prairie Lake (DMIT-86) looking south during low-water-level conditions.

Rock Springs Run State Reserve Site SJ-FB4 (DMIT-90 , Formerly SJ-FB4 or SJ-0132)

Rock Springs Run State Reserve Site SJ-FB4 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (Figure D-56). Although this system was identified as Hydroclass Type 2F (Floodplain), the portion of the wetland evaluated has only a narrow connection to the larger strand swamp, and the hydrology appears to be primarily groundwater driven. The site was selected as a DMIT monitoring location, and transects were established on the south and western sides of the system (Figure D-57). Access to the site is through the State Reserve area and a gate at the public parking area on CR 433.

Figure D-56. Location of Rock Spring Run State Reserve Site SJ-FB4 (DMIT-90).

Figure D-57. Rock Spring Run State Reserve Site SJ-FB4 (DMIT-90), May 2019.

Rock Springs Run State Reserve Site 1 (DMIT-91, Formerly SJ-0133)

Rock Springs Run State Reserve Site 1 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-58**). The site was included in the DMIT long-term wetlands monitoring program, and transects were established on the northern side of the wetland in 2019. The first 5-year monitoring event was conducted in 2024 (**Figure D-59**). Access to the site is through the State Reserve area and a gate at the public parking area on CR 433.

Figure D-58. Location of Rock Springs Run State Reserve Site 1 (DMIT-91).

Figure D-59. Rock Springs Run State Reserve Site 1 (DMIT-91), December 2019.

Rock Springs Run State Reserve Site 2 (DMIT-92, Formerly SJ-0130)

Rock Springs Run State Reserve Site 2 is Plains wetland that was determined to be Not Stressed in the assessment conducted for the 2025 CFWI RWSP analysis (**Figure D-60**). The site was selected as a DMIT monitoring location, and transects were established on the eastern, southern, and western sides of the wetland in 2019. The first 5-year monitoring event was conducted in 2024. Access to the site is through the State Reserve area and a gate at the public parking area on CR 433.

Figure D-60. Location of Rock Springs Run State Reserve Site 2 (DMIT-92).

Round Lake (DMIT-99, Formerly SJ-FM and SJ-0007)

Round Lake is a Ridge wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP. This lake was also Stressed in 2012 and 2018 (**Figure D-61**). The site was selected as a DMIT monitoring location and a wetland monitoring location for the City of Mount Dora's CUP. Transects were established on the northern and southern sides of the wetland in 2016, and the first 5-year monitoring event was conducted in 2021 (**Figure D-62**). This site may be subject to development in the near future, and the City of Mount Dora is investigating replacement locations. This site is on private property and access is off Round Lake Road.

Figure D-61. Location of Round Lake (DMIT-99).

Figure D-62. Round Lake (DMIT-99), May 2021.

Lake Bartho (DMIT-113, Formerly SJ-0078)

Lake Bartho is a Ridge wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-63**). This site was selected as a DMIT monitoring location and transects were established on the western side of the wetland. Monitoring was initiated on the site in 2022, and the first 5-year monitoring event is planned for 2027 (**Figure D-64**). Access to the site is through a gate at the at the end of Holstein Road.

Figure D-63. Location of Lake Bartho (DMIT-113).

Figure D-64. Lake Bartho (DMIT-113), June 2022.

Lake Jesup Isolated (DMIT-114, Formerly SJ-0080)

Lake Jesup Isolated is a Plains wetland; this site was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-65**). It was selected for inclusion in the DMIT long-term wetlands monitoring program, and transects were established on the southern and eastern sides of the wetland in 2017. The first 5-year monitoring event was conducted in 2022 (**Figure D-66**). This property is owned by the SJRWMD, and access to the site is through a gate at the end of Elm Street.

Figure D-65. Location of Lake Jesup Isolated (DMIT-114).

Figure D-66. Lake Jesup Isolated (DMIT-114), August 2022.

Johns Lake Scrub Point Preserve (DMIT-116, Formerly SJ-0151)

Johns Lake Scrub Point Preserve is a Plains wetland (**Figure D-67**). While this site was not included in the Class 2 wetlands dataset for the analysis conducted for the 2025 CFWI RWSP, it is included in this appendix since it will replace the existing Johns Lake site (SJ-QB) described in Appendix B. This site was selected as a DMIT monitoring location, and transects were established on the eastern side of the wetland. Monitoring at the site began in 2017, and the first 5-year event was conducted in 2022 (**Figure D-68**). Access to the site is through a gate at the north end of Eddy Drive. Minimum Levels for Johns Lake are under development and are planned to be presented to the SJRWMD Governing Board in late 2024.

Figure D-67. Location of Johns Lake Scrub Point Preserve (DMIT-116).

Figure D-68. Johns Lake Scrub Point Preserve (DMIT-116), June 2022.

Hal Scott Regional Park Site 1 (DMIT-133, Formerly SJ-0147)

Hal Scott Regional Park Site 1 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-69**). This site was selected as a DMIT monitoring location, and transects were established on the eastern side of the wetland in 2020 (**Figure D-70**). In 2025, the first 5-year event will be conducted. This property is owned by the SJRWMD, and access to the site is through a gate at the Hal Scott Preserve public parking area off Dallas Boulevard.

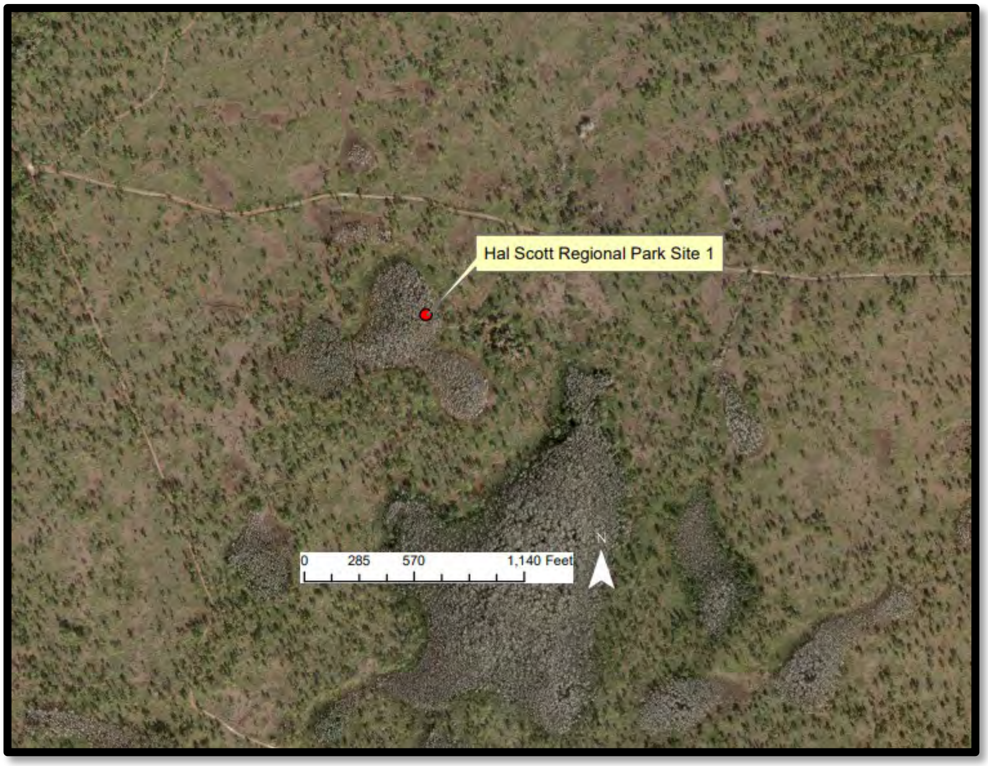

Figure D-69. Location of Hal Scott Regional Park Site 1 (DMIT-133).

Figure D-70. Hal Scott Regional Park Site 1 (DMIT-133), June 2020.

Lake Apopka Marsh Flow-Way Site 1 (DMIT-162, Formerly SJ-0145)

Lake Apopka Marsh Flow-Way Site 1 is a Plains wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-71**). This site was included in the DMIT long-term wetlands monitoring program, and transects were established on the western, southern, and eastern sides of the wetland. Monitoring was initiated on the site in 2019, and the first 5-year occurred in 2024. Access to the site, located on SJRWMD lands, is through a gate off of Ranch Road.

Figure D-71. Location of Lake Apopka Marsh Flow-Way Site 1 (DMIT-162).

Lake Apopka Marsh Flow-Way Site 2 (DMIT-163, Formerly SJ-0146)

This site is a Plains wetland that is located on SJRWMD lands; it was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-72**). It was included in the DMIT long-term wetlands monitoring program, and transects were established on the southeastern side of the wetland. Monitoring was initiated at the site in 2019; the first 5-year event took place in 2024 (**Figure D-73**). Access to the site is through a gate off of Ranch Road.

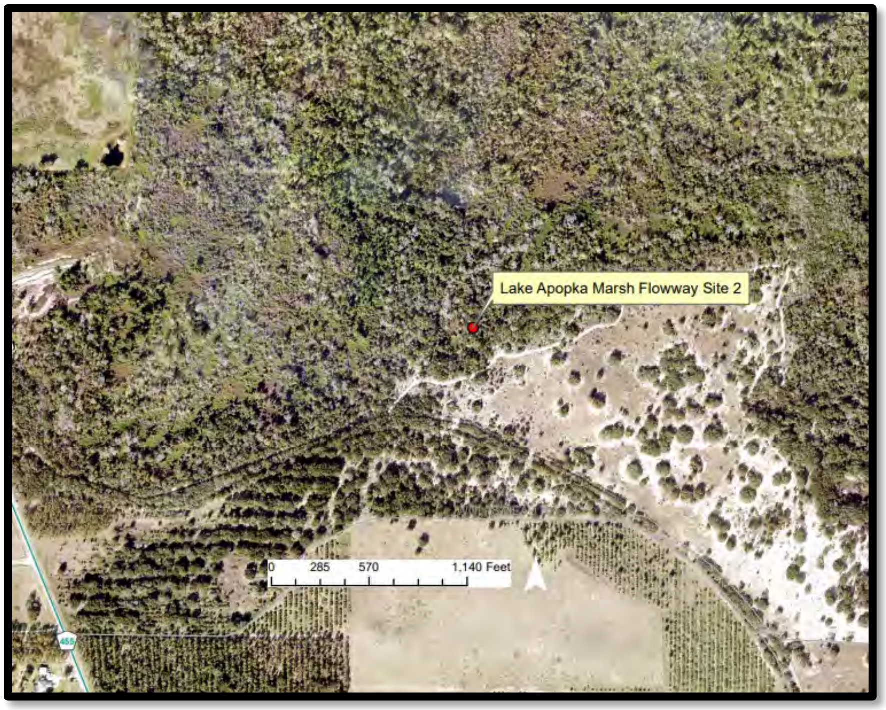

Figure D-72. Location of Lake Apopka Marsh Flow-Way Site 2 (DMIT-163).

Figure D-73. Lake Apopka Marsh Flow-Way Site 2, June 2019.

Rock Springs Run State Reserve Site 3 (DMIT-168, Formerly SJ-0042)

Rock Springs Run State Reserve Site 3 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-74**). This site was selected as a DMIT monitoring location, and transects were established on the western and northern sides of the wetland. Monitoring was initiated on the site in 2021, and the first 5-year monitoring event is planned for 2026. Access to the site is through the State Reserve area and a gate at the public parking area on CR 433.

Figure D-74. Location of Rock Springs Run State Reserve Site 3 (DMIT-168).

Rock Springs Run State Reserve Site 4 (DMIT-169, Formerly SJ-0043)

Rock Springs Run State Reserve Site 4 is a Plains wetland; it was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-75**). This site was included in the DMIT long-term wetlands monitoring program. Transects were established on the northern and western sides of the wetland in 2021; the first 5 year event is planned for 2026 (**Figure D-76**). Access to the site is through the State Reserve area and a gate at the public parking area on CR 433.

Figure D-75. Location of Rock Springs Run State Reserve Site 4 (DMIT-169).

Figure D-76. Rock Springs Run State Reserve Site 4 (DMIT-169), August 2021.

Rock Springs Run State Reserve Site 5 (DMIT-170, Formerly SJ-FB2 and SJ-0044)

Rock Springs Run State Reserve Site 5 (SJ-FB2) is a Plains wetland (**Figure D-77**). While this site was not included in the Class 2 wetlands dataset for the analysis conducted for the 2025 CFWI RWSP, it is included in this appendix since it was selected as a DMIT monitoring location and established in 2021. The first 5-year monitoring event is planned for 2026 (**Figure D-78**). Access to the site is through the State Reserve area and a gate at the public parking area on CR 433.

Figure D-77. Location of Rock Springs Run State Reserve Site 5 (DMIT-170).

Figure D-78. Location of Rock Springs Run State Reserve Site 5 (DMIT-170), July 2021.

Wekiva River State Park Site 1 (DMIT-174, Formerly SJ-0075)

Wekiva River State Park Site 1 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-79**). It was selected as a DMIT monitoring location, and in 2022, transects were established on the northern and western sides of the wetland. The first 5-year event is planned for 2027 (**Figure D-80**). Access to the site is through a gate across from Katie's Landing public parking area off of Wekiva Park Drive. There is an alternate access point through a gate north of West Florida 46, across from Longwood Markham Road.

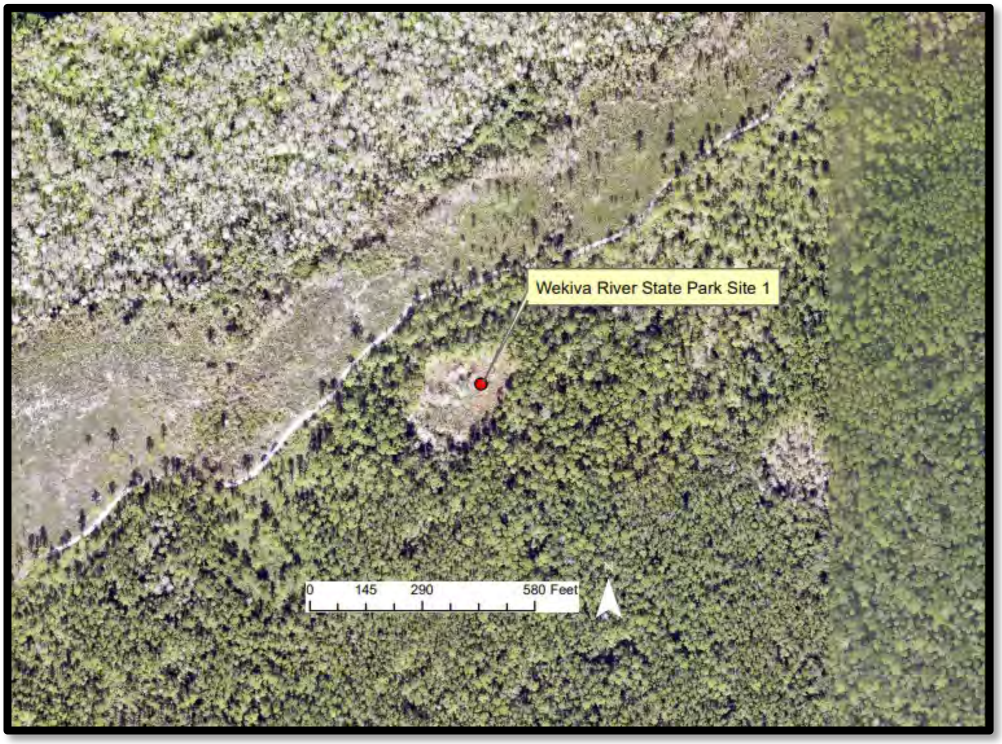

Figure D-79. Location of Wekiva River State Park Site 1 (DMIT-174).

Figure D-80. Wekiva River State Park Site 1 (DMIT-174), May 2022.

Wekiva River State Park Site 2 (DMIT-175, Formerly SJ-0079)

Wekiva River State Park Site 2 is a Ridge wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-81**). This wetland was selected as a DMIT monitoring location, and transects were established on the northern, southern and eastern sides of the wetland. Monitoring was initiated on the site in 2022, and the first 5-year monitoring event will occur in 2027 (**Figure D-82**). Access to the site is through a gate at the at the end of Holstein Road.

Figure D-81. Location of Wekiva River State Park Site 2 (DMIT-175).

Figure D-82. Wekiva River State Park Site 2 (DMIT-175), June 2022.

Hal Scott Preserve and Regional Park Site 2 (DMIT-177, Formerly SJ-0150)

Hal Scott Preserve and Regional Park Site 2 is a Plains wetland; it was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-83**). It was selected for inclusion in the DMIT long-term wetlands monitoring program. Transects were established on the eastern side of the wetland in 2023 (**Figure D-84**); the first 5-year monitoring event is planned for 2028. Access to the site is through a gate at the north end of Dallas Boulevard.

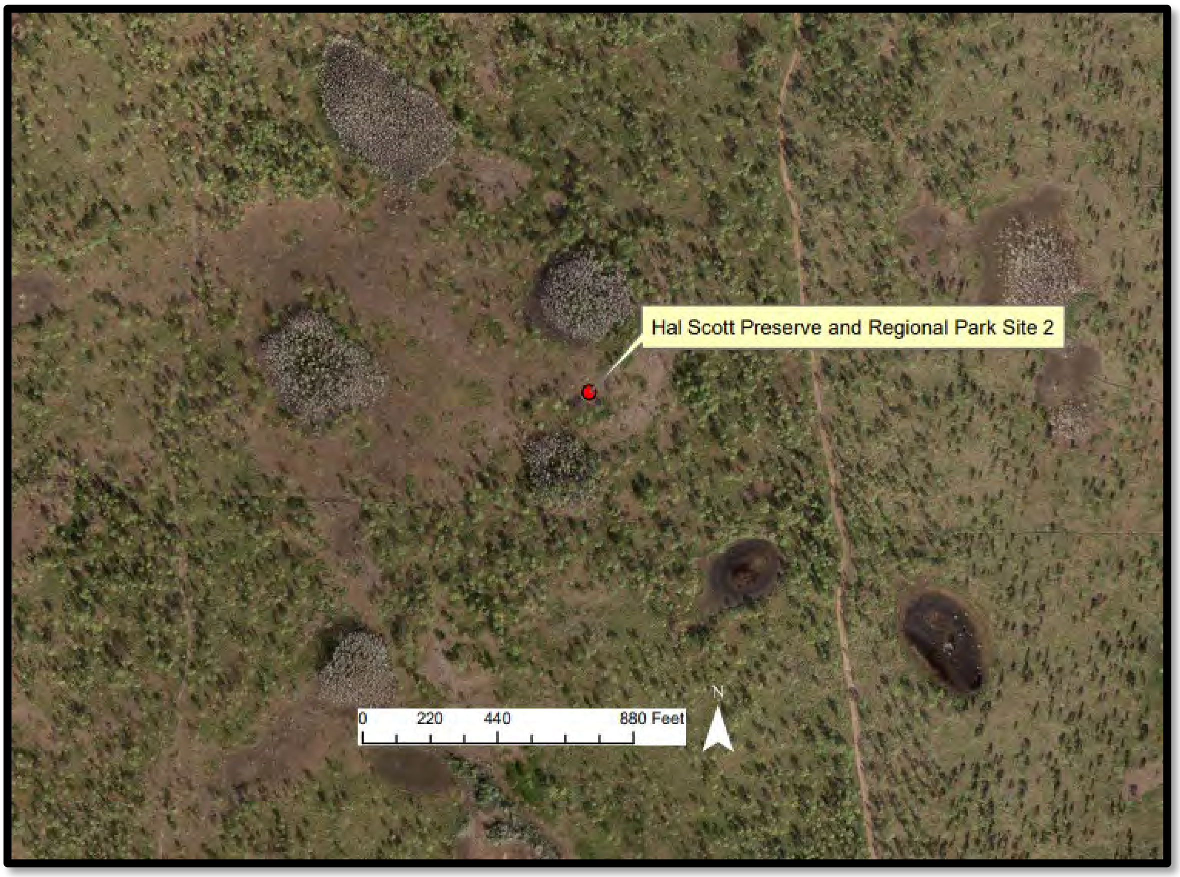

Figure D-83. Location of Hal Scott Preserve and Regional Park Site 2 (DMIT-177).

Figure D-84. Hal Scott Preserve and Regional Park Site 2 (DMIT-177), June 2023.

Geneva Wilderness Area (DMIT-180, Formerly SJ-0015)

Geneva Wilderness Area is a Plains wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-85**). This wetland selected as a DMIT monitoring location, and transects were established on the western side of the wetland. Monitoring was initiated on the site in 2021 (**Figure D-86**); the first 5-year event will occur in 2026**.** Access to the site is through the Geneva Wilderness Area Trailhead public parking area on North CR 426.

Figure D-85. Location of Geneva Wilderness Area (DMIT-180).

Figure D-86. Geneva Wilderness Area (DMIT-180), March 2021.

Black Hammock Site 1 (DMIT-181, Formerly SJ-0040)

Black Hammock Site 1 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-87**). This site was selected for inclusion in the DMIT long-term wetlands monitoring program, and transects were established on the southern side of the wetland. Monitoring was initiated on the site in 2021; the first 5-year event is planned for 2026 (**Figure D-88**). Access to the site is through a gate at the northeast corner of Genova Road.

Figure D-87. Location of Black Hammock Site 1 (DMIT-181).

Figure D-88. Black Hammock Site 1 (DMIT-181), June 2021.

Black Hammock Site 2 (DMIT-182, Formerly SJ-0041)

Black Hammock Site 2 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-89**). This wetland was selected as a DMIT monitoring location, and transects were established on the western side of the wetland. Monitoring was initiated on the site in 2021, and the first 5-year evaluation is planned for 2026 (**Figure D-90**). Access to the site is through a gate at the northeast corner of Genova Road.

Figure D-89. Location of Black Hammock Site 2 (DMIT-182).

Figure D-90. Black Hammock Site 2 (DMIT-182), June 2021.

Hal Scott Regional Park Site 2 (DMIT-195, Formerly SJ-0148)

Hal Scott Regional Park Site 2 was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-91**). This Plains wetland was selected as a DMIT monitoring location, and transects were established on the western, southern, and eastern sides of the wetland in 2020 (**Figure D-92**). The first 5-year monitoring event is planned for 2025. This property is owned by the SJRWMD; access to the site is through a gate at the Hal Scott Preserve public parking area off Dallas Boulevard.

Figure D-91. Location of Hal Scott Regional Park Site 2 (DMIT-195).

Figure D-92. Hal Scott Regional Park Site 2 (DMIT-195), June 2020.

Hal Scott Regional Park Site 3 (DMIT-196, Formerly SJ-0149)

Hal Scott Regional Park Site 3 is a Plains wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-93**). This site was selected as a DMIT monitoring location, and transects were established on the western side of the wetland. Monitoring was initiated on the site in 2020, and the first 5-year monitoring event is planned for 2025 (**Figure D-94**). This property is owned by the SJRWMD, and access to the site is through a gate at the Hal Scott Preserve public parking area off Dallas Boulevard.

Figure D-93. Location of Hal Scott Regional Park Site 3 (DMIT-196).

Figure D-94. Hal Scott Regional Park Site 3 (DMIT-196), July 2020.

Hilochee WMA Site 1 (DMIT-197, Formerly SJ-0107)

Hilochee WMA Site 1 is a Ridge wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-95**). It was included in the DMIT long-term wetlands monitoring program, and transects were established on the western side of the wetland. Monitoring was initiated at the site in 2023, and the first 5-year event is planned for 2028 (**Figure D-96**). Access to the site is through a gate at the public trailhead parking area at Riddick Grove Road off of U.S. Highway 27.

Figure D-95. Location of Hilochee WMA Site 1 (DMIT-197).

Figure D-96. Hilochee WMA Site 1 (DMIT-197), May 2023.

Hilochee WMA Site 3 (DMIT-204, Formerly SJ-0101)

Hilochee WMA Site 3 is a Ridge wetland that was determined to be Stressed for the evaluation conducted for the 2025 CFWI RWSP (Figure D-97). The site was included in the DMIT long-term wetlands monitoring program, and transects were established on the western, northern and eastern sides of the wetland in 2023. In 2028, the first 5-year monitoring event is planned (Figure D-98). Access to the site is through a gate at the public trailhead parking area at Riddick Grove Road off of U.S. Highway 27.

Figure D-97. Location of Hilochee WMA Site 3 (DMIT-204).

Figure D-98. Hilochee WMA Site 3 (DMIT-204), May 2023.

Hilochee WMA Site 4 (DMIT-205, Formerly SJ-0106)

Hilochee WMA Site 4 is a Ridge wetland that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figure D-99**). It was selected as a DMIT monitoring location, and transects were established on the southern, northern and eastern sides of the wetland. Monitoring was initiated on the site in 2023; the first 5-year event is planned for 2028 (**Figure D-100**). Access to the site is through a gate at the public trailhead parking area at Riddick Grove Road off of U.S. Highway 27.

Figure D-99. Location of Hilochee WMA Site 4 (DMIT-205).

Figure D-100. Hilochee WMA Site 4 (DMIT-205), May 2023.

Lake Gem (SJ-AJ)

Lake Gem is a Plains lake that was determined to be Not Stressed for the evaluation conducted for the 2025 CFWI RWSP (**Figures D-101 and D-102**). While it was Stressed for the 2015 CFWI RWSP analysis, it changed status to Not Stressed for the 2020 CFWI RWSP analysis.

Monitoring of this lake is conducted by OUC as part of the wetland monitoring program established by their CUP. The original determination of Stressed for the 2015 CFWI RWSP analysis appears to be based on the presence of a ditch along the western side of the lake which discharges offsite when the lake reaches higher water levels. However, the hydrology within the lake appears to be stable and consistent with expected regional hydrologic conditions.

The analysis of the period of record of water level data selected for the current analysis for Lake Gem indicated that this site is not representative of groundwater-dominated wetlands in the CFWI Planning Area. Therefore, the lake was removed from the Class 1 wetlands dataset and included in the Class 2 wetlands dataset. This lake can be accessed through the Canterbury Retreat off of SR 434. A walking trail extends around the perimeter of the lake.

Figure D-101. Location of Lake Gem (SJ-AJ).

Figure D-102. Lake Gem (SJ-AJ), May 2018.

Unnamed Wetland South of SR 46 (SJ-LB)

This Plains wetland was determined to be Stressed for the analysis conducted in support of the 2025 CFWI RWSP. It was also determined to be Stressed for the 2015 and 2020 CFWI RWSP analyses. Monitoring of this wetland system was conducted by Seminole County as part of the wetland monitoring program established by their CUP. However, the expansion of SR 46 necessitated the removal of the existing monitoring well in 2019, and monitoring at this location was suspended. The lack of continuous hydrologic data resulted in this wetland being removed from the Class 1 wetlands dataset and being placed into the Class 2 wetlands dataset.

This system consists of a small lake, with a wetland edge surrounded by homes, roadways, and commercial properties (**Figure D-103**). Overall, it is characterized by moderate relief from the adjacent uplands, through a narrow wetland edge to the open water portion of the system. The patchy upland vegetation surrounding most of the wetland has become overgrown and is fire suppressed. Access to the system is through the commercial property in the northwest corner of the lake off of SR 46.

Figure D-103. Location of Unnamed Wetland South of SR 46 (SJ-LB).

Island Lake (SJ-LH)

Island Lake is a Plains wetland that was determined to be Not Stressed in the analysis conducted in support of the 2025 CFWI RWSP (**Figures D-104 and D-105**). While it was determined to be Stressed for the 2015 CFWI RWSP analysis, it changed status to Not Stressed for the 2020 CFWI RWSP analysis.

Monitoring of this wetland system is conducted by the OUC as part of the wetland monitoring program established by their CUP. The original determination of Stressed was based in part on the observation that islands within the marsh system appeared to have expanded based on review of historic aerials dating back to the 1950s. Water levels within the marsh, which is surrounded by a highly-urbanized area, appear to be stable and consistent with regional climatic conditions, and as indicated by the review of water level monitoring data, Surficial Aquifer (SA) levels have shown an overall, gradual increase since 2005. With the exception of edge effects resulting from the adjacent developments, the marsh system currently appears to be healthy (**Figure D-105**). The lake can be accessed through the commercial property in the northern portion of the system off of SR 434.

The analysis of the period of record of water level data selected for the current analysis for Island Lake indicated that this site is not representative of groundwater-dominated wetlands in the CFWI Planning Area. Therefore, the lake was removed from the Class 1 wetlands dataset and included in the Class 2 wetlands dataset.

Figure D-104. Location of Island Lake (SJ-LH).

Figure D-105. Location of Island Lake (SJ-LH), July 2018.

Church Lake (SJ-QA)

Church Lake is a Ridge wetland that was determined to be Stressed in the analysis conducted in support of the 2025 CFWI RWSP. It was also determined to be Stressed in earlier assessments. This system is a shallow lake surrounded by improved pasture and silviculture, SR 27 to the north, and a residential development to the east (**Figure D-106**). Water level data and visual observations indicate that this system experiences a wide fluctuation range and during periods of low water, several deeper pools persist (**Figure D-107**). Access to the system is through The Woodlands subdivision of off U.S. Highway 27.

Monitoring of this wetland system is conducted by the United States Geological Survey (USGS) as part of their regional hydrologic monitoring network. Over the last several years, the USGS has significantly reduced the frequency for hydrologic data collection on this system, and sufficient data were not available for the site to be included in the Class 1 wetlands dataset. Therefore, Church Lake was included in the Class 2 wetlands dataset.

Figure D-106. Location of Church Lake (SJ-QA).

Figure D-107. Church Lake (SJ-QA), June 2018.

Trout Lake (SJ-QC)

Trout Lake is a Ridge wetland that was determined to be Not Stressed in the analysis conducted in support of the 2025 CFWI RWSP. It was also determined to be Not Stressed in earlier assessments. The lake is surrounded by improved pasture and inactive citrus, active citrus, and SR 27 to the west (**Figures D-108 and D-109**). The City of Orlando and Orange County reuse project "Water Conserv II" rapid infiltration basin (RIB) Site 2 is located approximately 2.5 miles to the north. At high water levels, Trout Lake connects with Pike Lake to the southeast via a narrow ditch. Access to the lake is via Shell Pond Road off of U.S. Highway 27.

Monitoring of this lake is conducted by the USGS as part of their regional hydrologic monitoring network. Over the last several years, the USGS has significantly reduced the frequency for hydrologic data collection on this system, and sufficient data were not available for Trout Lake to be included in the Class 1 wetlands dataset. Therefore, it was included in the Class 2 wetlands dataset.

Figure D-108. Location of Trout Lake (SJ-QC).

Figure D-109. Trout Lake (SJ-QC), May 2018.

Southwest Florida Water Management District Sites

Alston New Cypress (DMIT-2)

Alston New Cypress is a Plains wetland located on the Alston Tract within the SWFWMD's Upper Hillsborough Preserve (**Figure D-110**), accessible from Deems Road and through a locked SWFWMD gate. It was established as a DMIT long-term wetlands monitoring site in 2016, and the 5-year monitoring event was conducted in 2021. Alston Bay, also a DMIT monitoring site, as well as a Class 1 wetland described in Appendix B, is located nearby within the Alston Tract. The April 2023 assessment, which was conducted in the transect area behind the monitoring well, determined that the wetland was Not Stressed (**Figures D-111, D-112, and D-113**). Recent hog damage was observed in this high-quality, cypress wetland. Getting to this site with a 4x4 truck is not recommended since the roads on the preserve are typically very wet; an ORV, ATV, or side-by-side is suggested.

Figure D-110. Location of Alston New Cypress (DMIT-2).

Figure D-111. Alston New Cypress (DMIT-2), April 2023.

Figure D-112. Alston New Cypress (DMIT-2), April 2023.

Figure D-113. Alston New Cypress (DMIT-2), April 2023.

Lake Annie (Polk) (DMIT-43)

Lake Annie is located between Dundee and Lake Wales just off Scenic Highway (U.S. Highway 17) in Polk County (**Figure D-114**). Transects will be established for this Ridge lake on the Barbara B. Pedersen Wildlife Preserve, which is owned and managed by the Green Horizon Land Trust, in 2025 to include this location in the DMIT long-term wetlands monitoring program. A well to monitor SA levels in the vicinity of Lake Annie is planned to be constructed in the near future. The site was assessed in November 2022 from the preserve and was determined to be Not Stressed (**Figures D-115, D-116, and D-117**). Damage from Hurricane Ian was observed during the assessment.

In 2007, Minimum Levels were established for Lake Annie by the SWFWMD. The established levels include a Minimum Lake Level of 112.8 ft. NGVD29 or 111.9 ft. NAVD88 and a High Minimum Lake Level of 115.2 ft. NGVD29 or 114.3 ft. NAVD88. The Minimum Level is the median water level, i.e., the level the lake should reach or exceed at least 50 percent of the time, while the High Minimum Level is the level the lake should reach or exceed ten percent of the time. As of the 2023 assessment, Lake Annie was meeting its Minimum Levels.

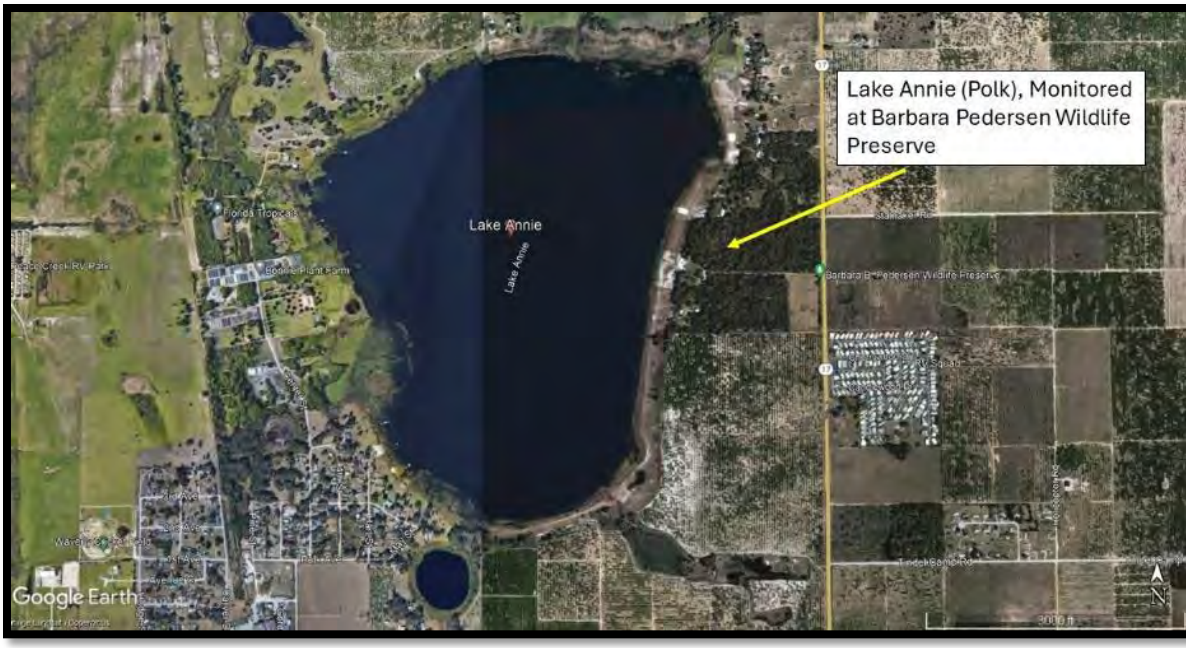

Figure D-114. Location of Lake Annie (Polk) (DMIT-43).

Figure D-115. Lake Annie (Polk) (DMIT-43), November 2022.

Figure D-116. Lake Annie (Polk) (DMIT-43), November 2022.

Figure D-117. Lake Annie (Polk) (DMIT-43), November 2022.

Lake Easy (DMIT-47)

Lake Easy is located north of Crooked Lake and northwest of Babson Park in Polk County (**Figure D-118**). This Ridge lake was assessed both at the boat ramp along the southern shore and at the marsh owned by Polk County on the east side in November 2022 and was determined to be Not Stressed (**Figures D-119, D-120, and D-121**). Cogon grass was observed to be invading the marsh during the assessment. Lake levels were above normal, most likely as a result of Hurricane Ian passing over the area in September 2022.

Lake Easy will be established as a DMIT long-term wetlands monitoring site in 2025, and transects will be set up along the eastern shoreline on Polk County lands. Once the wetland edge elevation is established in 2025, this site can most likely be included in the Class 1 wetlands dataset for the analysis in support of the 2030 CFWI RWSP, depending on the period of record of data collection for the SA monitoring well and staff gauge located on the South side of the lake near the boat ramp.

Minimum Levels were established for Lake Easy by the SWFWMD in 2018. The established levels include a Minimum Lake Level of 106.5 ft. NGVD29 or 105.3 ft. NAVD88 and a High Minimum Lake Level of 109.8 ft. NGVD29 or 108.6 ft. NAVD88. As of the most recent assessment (2023), Lake Easy was meeting its Minimum Levels.

Figure D-118. Location of Lake Easy (DMIT-47).

Figure D-119. Lake Easy (DMIT-47), November 2022.

Figure D-120. Lake Easy (DMIT-47), November 2022.

Figure D-121. Lake Easy (DMIT-47), November 2022.

Lake Wales Ridge State Forest Arbuckle 1 (DMIT-63)

The Arbuckle Tract of Lake Wales Ridge State Forest is located in the Frostproof area, and this site can be accessed via the sand road at the entrance off Old Avon Park Road (**Figure D-122**). A 4x4 vehicle is recommended to access the site. Lake Wales Ridge State Forest Arbuckle 1 was established as a DMIT long-term wetlands monitoring site in 2022. This high-quality marsh was assessed in April 2022 and was determined to be Not Stressed (**Figures D-123, D-124, and D-125**). Historical hog damage was observed during the assessment, and the area surrounding the marsh had been recently burned.

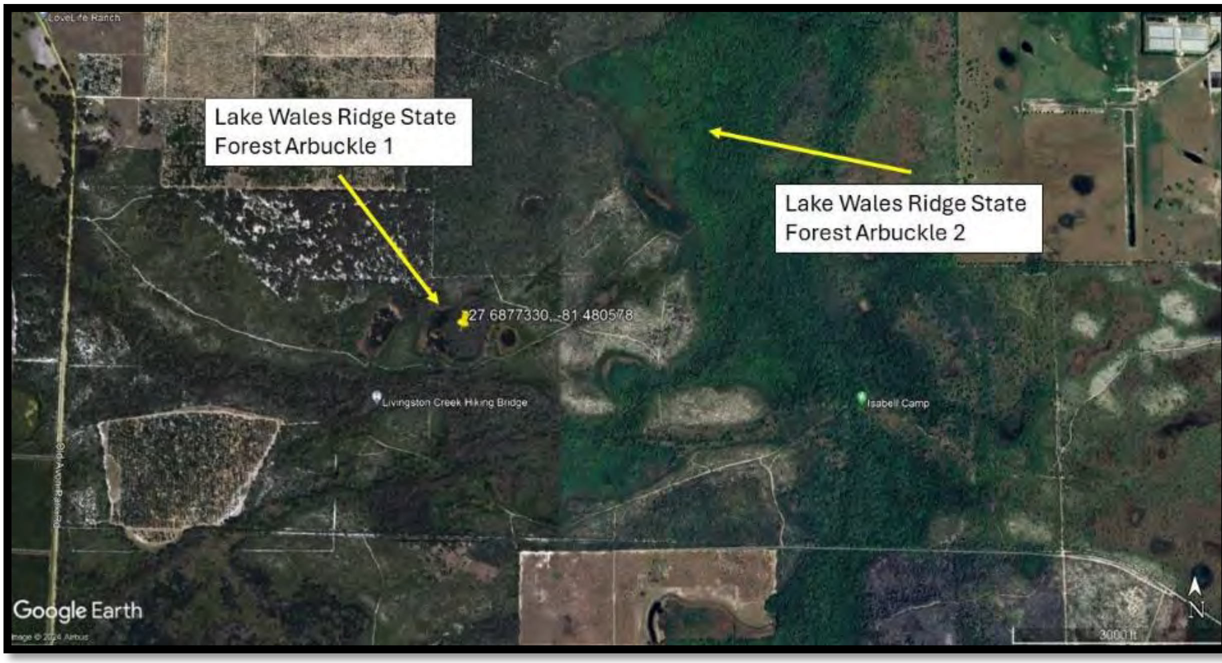

Figure D-122. Location of Lake Wales Ridge State Forest Arbuckle 1 (DMIT-63) and Arbuckle 2 (DMIT-64).

Figure D-123. Lake Wales Ridge State Forest Arbuckle 1 (DMIT-63), April 2022.

Figure D-124. Lake Wales Ridge State Forest Arbuckle 1 (DMIT-63), April 2022.

Figure D-125. Lake Wales Ridge State Forest Arbuckle 1 (DMIT-63), April 2022.

Lake Wales Ridge State Forest Arbuckle 2 (DMIT-64)

Lake Wales Ridge State Forest Arbuckle 2 is located to the northeast of Lake Wales Ridge State Forest Arbuckle 1 (**Figure D-122**). A 4x4 vehicle is recommended to access the site. This Ridge wetland was assessed in April 2022 and was determined to be Not Stressed (**Figures D-126 and D-127**). This shrub marsh was overgrown during the assessment and in need of a controlled burn. It was established as a DMIT long-term wetlands monitoring site in 2022.

Figure D-126. Lake Wales Ridge State Forest Arbuckle 2 (DMIT-64), April 2022.

Figure D-127. Lake Wales Ridge State Forest Arbuckle 2 (DMIT-64), April 2022.

Lake Wales Ridge State Forest Walk in the Water 1 (DMIT-65)

Lake Wales Ridge State Forest Walk in the Water 1 is a Ridge wetland located in the Walk-in-the-Water Tract of Lake Wales Ridge State Forest, which is about 2 miles east of Frostproof. The site is accessible via the entrance off of Highway 630 E (and a 4x4 vehicle with good off-road tires is needed to traverse the deep sugar sand roads) (**Figure D-128**). This high-quality marsh was established as a DMIT long-term wetlands monitoring site in 2022. It was assessed in April 2022 and was determined to be Not Stressed (**Figures D-129, D-130, and D-131**).

Figure D-128. Location of Lake Wales Ridge State Forest Walk in the Water 1 (DMIT-65) and Walk in the Water 2 (DMIT-66).

Figure D-129. Lake Wales Ridge State Forest Walk in the Water 1 (DMIT-65), April 2022.

Figure D-130. Lake Wales Ridge State Forest Walk in the Water 1 (DMIT-65), April 2022.

Figure D-131. Lake Wales Ridge State Forest Walk in the Water 1 (DMIT-65), April 2022.

Lake Wales Ridge State Forest Walk in the Water 2 (DMIT-66)

Lake Wales Ridge State Forest Walk in the Water 2 is a seepage bayhead located within the Lake Wales Ridge State Forest Walk-in-the-Water Tract. It is located near the northern/northwestern boundary of the tract (**Figure D-128**). This wetland is accessible by traveling through the tract from Lake Wales Ridge State Forest Walk in the Water 1 or via the entrance off King Trail located at the northeast corner of the forest tract. For either access, a 4x4 vehicle with good off-road tires is needed to traverse the deep sugar sand roads (**Figure D-128**).

This Ridge wetland was assessed in April 2022 and was determined to be Not Stressed (**Figures D-132, D-133, and D-134**). Because of numerous bay trees that fell as a result of Hurricane Irma, there are many open areas in the bayhead that have become overgrown with vines. This sites was established as a DMIT long-term wetlands monitoring site in 2022.

Figure D-132. Lake Wales Ridge State Forest Walk in the Water 2 (DMIT-66), April 2022.

Figure D-133. Lake Wales Ridge State Forest Walk in the Water 2 (DMIT-66), April 2022.

Figure D-134. Lake Wales Ridge State Forest Walk in the Water 2 (DMIT-66), April 2022.

Lake Wales Ridge WEA 2 (DMIT-68)

Along with Lake Wales Ridge Wildlife and Environmental Area (WEA)1 (a Class 1 wetland described in Appendix B), Lake Wales Ridge WEA 2 will be established as a DMIT long-term wetlands monitoring site in 2025. This wetland is a Ridge wetland and a groundwater-dominated marsh located in the Lake Wales Ridge WEA, Mountain Lake Cutoff Tract, which is owned and managed by the Florida Fish and Wildlife Conservation Commission (FWC) (**Figure D-135**). It is located within the city limits of Lake Wales and is accessed from north end of the tract through a locked gate on East Mountain Lake Cutoff Road, just east of U.S. Highway 27 (**Figure D-135**). This site was assessed in August 2023 along the eastern portion of the wetland behind the monitoring well; it was determined to be Stressed (**Figures D-136, D-137, and D-138**).

Figure D-135. Location of Lake Wales Ridge WEA 2 (DMIT-68).

Figure D-136. Lake Wales Ridge WEA 2 (DMIT-68), August 2023.

Figure D-137. Lake Wales Ridge WEA 2 (DMIT-68), August 2023.

Figure D-138. Lake Wales Ridge WEA 2 (DMIT-68), August 2023.

Thornhill Ranch (DMIT-102)

Thornhill Ranch was established as a DMIT long-term wetlands monitoring site in April 2023, and it was determined to be Not Stressed during the field work to establish the monitoring transects (the area along the three transects was assessed). This Ridge wetland is located within walking distance of the Hilochee WMA Osprey Unit East Trailhead at the end of Home Run Boulevard, via U.S. Highway 27 south of I-4, in Polk County (**Figure D-139**). There is also a SWFWMD lock at the gate. This marsh is located in an area of intense residential and industrial development and has fair habitat quality (**Figures D-140, D-141, D-142, and D-143**). The site has a cluster of wells to monitor the Lower Floridan, Upper Floridan, and Surficial aquifers. Since the wetland edge elevation was determined during the 2023 DMIT transect site set up, this site can most likely be included in the Class 1 wetlands dataset for the analysis in support of the 2030 CFWI RWSP, depending on the period of record of data collection for the SA monitoring well.

Figure D-139. Location of Thornhill Ranch (DMIT-102).

Figure D-140. Thornhill Ranch (DMIT-102), April 2023.

Figure D-141. Thornhill Ranch (DMIT-102), April 2023.

Figure D-142. Thornhill Ranch (DMIT-102), April 2023.

Figure D-143. Thornhill Ranch (DMIT-102), April 2023.

Alafia River Reserve (DMIT-134)

In 2023, Alafia River Reserve was established as a DMIT long-term wetlands monitoring site on SWFWMD lands. This Plains wetland is a floodplain site located in the upper portion of the North Prong of the Alafia River (**Figures D-144, D-145, and D-146**). The areas along the monitoring transects were assessed, and the site was determined to be Not Stressed in April 2023. There have been issues with illegal motorcycle/ATV use and fence and site vandalism in the past.

Alafia River Reserve is located west of Mulberry in Polk County and can be accessed at the entrance to the preserve on Indian Oak Drive (**Figure D-147**). It is jointly managed by the SWFWMD and Polk County. From Highway 60, take Turner Road to Indian Oak Boulevard to get to Indian Oak Drive.

Figure D-144. Alafia River Reserve (DMIT-134), April 2023.

Figure D-145. Alafia River Reserve (DMIT-134), April 2023.

Figure D-146. Alafia River Reserve (DMIT-134), April 2023.

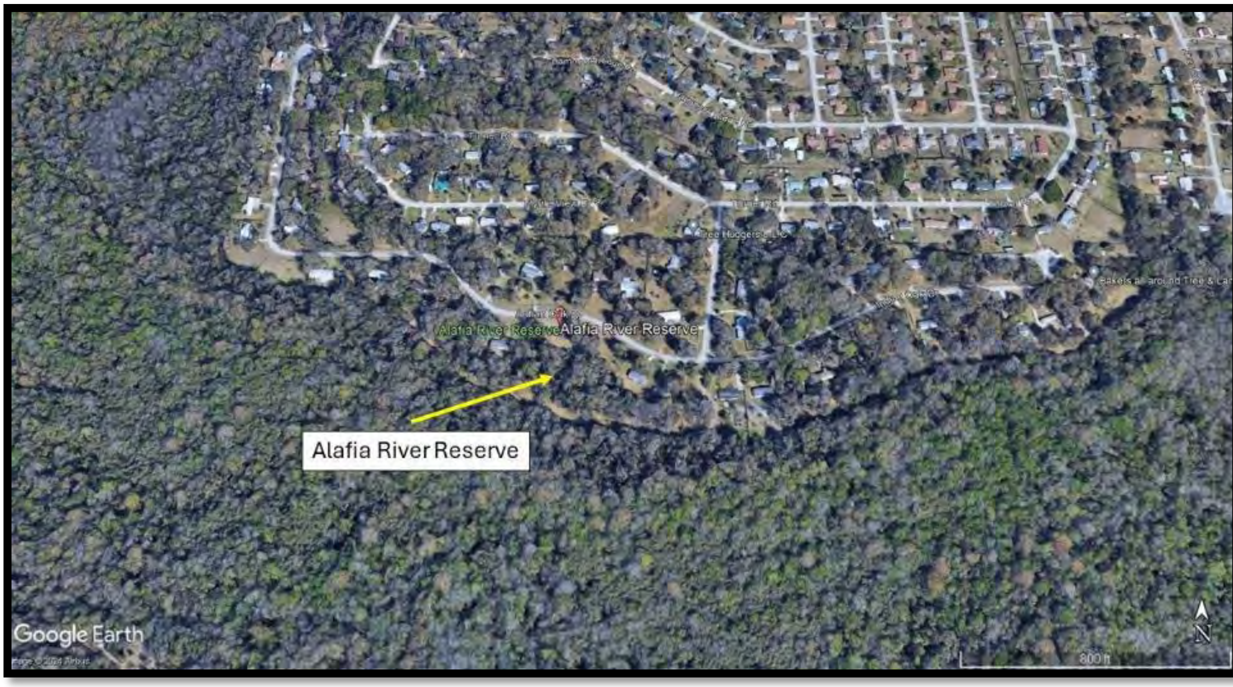

Figure D-147. Location of Alafia River Reserve (DMIT-134).

Bonnet Lake Marsh (DMIT-135)

Bonnet Lake Marsh is a Polk County property that was established as a DMIT long-term wetlands monitoring site in 2023. This Ridge wetland is contiguous to the north side of Bonnet Lake. Access to the site is at the end of Sanders Road via U.S. Highway 27 (**Figure D-148**).

This large marsh was assessed in April 2023 and was determined to be Not Stressed. The area that was assessed included the transect area behind the well; however, the wetland area along the two other monitored transects was also considered (**Figures D-149, D-150, and D-151**).

Figure D-148. Location of Bonnet Lake Marsh (DMIT-135).

Figure D-149. Bonnet Lake Marsh (DMIT-135), April 2023.

Figure D-150. Bonnet Lake Marsh (DMIT-135), April 2023.

Figure D-151. Bonnet Lake Marsh (DMIT-135), April 2023.

Crooked Lake West 1 (DMIT-137)

Crooked Lake West 1 will be established as a DMIT long-term wetlands monitoring site in 2025. It is located on lands that are jointly owned and managed by the SWFWMD, Polk County, and the U.S. Natural Resources Conservation Service. This Ridge wetland, which is a seepage slope bayhead, was assessed in August 2023 and determined to be Not Stressed (**Figures D-152, D-153, and D-154**). The assessment was done in the area behind the SA monitoring well. This site can be reached through the entrance gate by the railroad tracks via Lake Buffum Road (via Highway 640) (**Figure D-155**). A 4x4 vehicle is needed to traverse that unmaintained sand/mud road that parallels the railroad tracks to get to the site.

Figure D-152. Crooked Lake West 1 (DMIT-137), August 2023.

Figure D-153. Crooked Lake West 1 (DMIT-137), August 2023.

Figure D-154. Crooked Lake West 1 (DMIT-137), August 2023.

Figure D-155. Location of Crooked Lake West 1 (DMIT-137).

Crooked Lake West 2 (DMIT-138)

Crooked Lake West 2 is located on lands that are jointly owned and managed by the SWFWMD, Polk County, and the U.S. Natural Resources Conservation Service. It will be established as a DMIT long-term wetlands monitoring site in 2025. This site can be reached through the main entrance gate off U.S. Highway 27 (**Figure D-156**). A 4x4 vehicle is need to traverse the sugar sand road along the gas line easement to get to the wetland.

This small Ridge marsh was assessed in August 2023 and was determined to be Stressed. The entire wetland was assessed; the site was dry with upland plants growing throughout the wetland, including the center (**Figures D-157, D-158, and D-159**).

Figure D-156. Location of Crooked Lake West 2 (DMIT-138).

Figure D-157. Crooked Lake West 2 (DMIT-138), August 2023.

Figure D-158. Crooked Lake West 2 (DMIT-138), August 2023.

Figure D-159. Crooked Lake West 2 (DMIT-138), August 2023.

Crooked Lake WEA 1 (DMIT-139)

Crooked Lake WEA, which is owned and managed by the FWC, is located north of U.S. Highway 98, just west of the U.S. Highway 98/U.S. Highway 27 intersection. Crooked Lake WEA 1 is a Plains wetland in creek headwaters that is located just inside the west entrance off U.S. Highway 98 (**Figure D-160**). This site was established as a DMIT long-term wetlands monitoring site in 2022. The area in the vicinity of the three monitoring transects was assessed in April 2022 (**Figures D-161, D-162, and D-163**), and this wetland was determined to be Not Stressed.

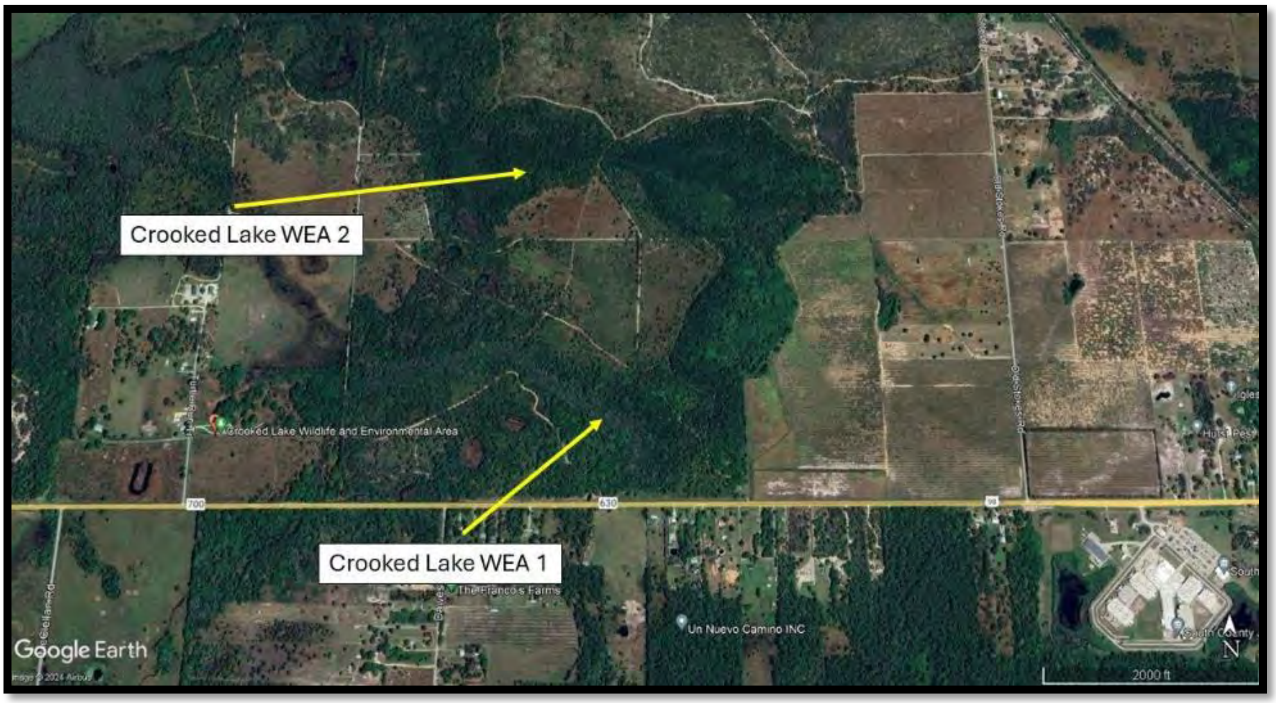

Figure D-160. Location of Crooked Lake WEA 1 (DMIT-139) and Crooked Lake WEA 1 (DMIT-140).

Figure D-161. Crooked Lake WEA 1 (DMIT-139), April 2022.

Figure D-162. Crooked Lake WEA 1 (DMIT-139), April 2022.

Figure D-163. Crooked Lake WEA 1 (DMIT-139), April 2022.

Crooked Lake WEA 2 (DMIT-140)

Crooked Lake WEA 2 was established as a DMIT long-term wetlands monitoring site in 2022. It is located within the interior of the WEA (**Figure D-160**), and similar to Crooked Lake WEA 1, the site is a Plains wetland in creek headwaters. Crooked Lake WEA 2 was assessed in April 2022 and was determined to be Not Stressed (**Figures D-164, D-165, and D-166**).

Figure D-164. Crooked Lake WEA 2 (DMIT-140), April 2022.

Figure D-165. Crooked Lake WEA 2 (DMIT-140), April 2022.

Figure D-166. Crooked Lake WEA 2 (DMIT-140), April 2022.

Gator Creek Reserve 1 (DMIT-141, Formerly SW-C1)

Gator Creek Reserve 1 is located within Polk County's Gator Creek Reserve, which is accessed via U.S. Highway 98 (**Figure D-167**). This Plains wetland is located east/adjacent to the parking area and is encircled by a paved walking trail. This site was established as a DMIT long-term wetlands monitoring site in 2023; it was assessed in April 2023 in the area of Transect 2 and determined to be Stressed. This wetland was also determined to be Stressed during the assessments conducted for the analyses in support of the 2015 and 2020 CFWI RWSPs. Impacts from the ditches draining the wetland are observable and include a sparse cypress canopy, with many downed trees (**Figures D-168, D-169, and D-170**). Treefall also occurred as a result of Hurricane Irma. This wetland could most likely be recovered/restored if the ditches were filled in and blocked.

Figure D-167. Location of Gator Creek Reserve 1 (DMIT-141) and Gator Creek Reserve 2 (DMIT-142).

Figure D-168. Gator Creek Reserve 1 (DMIT-141), April 2023.

Figure D-169. Gator Creek Reserve 1 (DMIT-141), April 2023.

Figure D-170. Gator Creek Reserve 1 (DMIT-141), April 2023.

Gator Creek Reserve 2 (DMIT-142)

Gator Creek Reserve 2 is located in the northeast corner of Polk County's Gator Creek Reserve (**Figure D-167**). This Plains wetland is located deep within the reserve behind a locked gate, and a 4x4 vehicle is needed to access the site. It was established as a DMIT long-term wetlands monitoring site in 2023. Gator Creek Reserve 2 was assessed in April 2023 near the monitoring well, and it was determined to be Not Stressed (**Figures D-171, D-172, and D-173**).

Figure D-171. Gator Creek Reserve 2 (DMIT-142), April 2023.

Figure D-172. Gator Creek Reserve 2 (DMIT-142), April 2023.

Figure D-173. Gator Creek Reserve 2 (DMIT-142), April 2023.

Green Swamp Upper Withlacoochee (DMIT-143)

Green Swamp Upper Withlacoochee, which is located in the SWFWMD's Green Swamp Wilderness Preserve East Tract (**Figure D-174**), was established as a DMIT long-term wetlands monitoring site in 2019; the 5-year monitoring event was conducted in 2024. This Plains wetland is located in the upper portion of the Withlacoochee River in Polk County. It was assessed in the area of Transect 3 in January 2023 and determined to be Not Stressed (**Figures D-175, D-176, and D-177**). The most direct access to this site is via the Green Swamp WMA entrance off Rockridge Road.

Figure D-174. Location of Green Swamp Upper Withlacoochee (DMIT-143).

Figure D-175. Green Swamp Upper Withlacoochee (DMIT-143), January 2023.

Figure D-176. Green Swamp Upper Withlacoochee (DMIT-143), January 2023.

Figure D-177. Green Swamp Upper Withlacoochee (DMIT-143), January 2023.

Hampton Colt Creek (DMIT-144)

Hampton Colt Creek was established as a DMIT long-term wetlands monitoring site in 2019, and the 5-year monitoring event was conducted in 2024. It is located in Polk County within the SWFWMD's Green Swamp Wilderness Preserve Hampon Tract (**Figure D-178**). This Plains wetland, located in the upper reach of Colt Creek, was assessed in May 2023 in the area of Transect 1; it was determined to be Not Stressed (**Figures D-179, D-180, and D-181**). A 4x4 vehicle is need to traverse the sand road to get to the wetland.

Figure D-178. Location of Hampton Colt Creek (DMIT-144).

Figure D-179. Hampton Colt Creek (DMIT-144), May 2023.

Figure D-180. Hampton Colt Creek (DMIT-144), May 2023.

Figure D-181. Hampton Colt Creek (DMIT-144), May 2023.

Hampton Gator Creek (DMIT-145)

Hampton Gator Creek is located in Polk County within the SWFWMD's Green Swamp Wilderness Preserve Hampon Tract (**Figure D-182**). This Plains wetland was assessed in the area of Transect 1 in May 2023 and is located in the upper reach of Gator Creek. Getting to this site with a 4x4 truck is not recommended since it is located deep within the tracts and the access trails are typically very wet and/or muddy; an ORV, ATV, or side-by-side is suggested. It was determined to be Not Stressed (**Figures D-183, D-184, D-185, and D-186**). This site was established as a DMIT long-term wetlands monitoring site in 2019, and the 5-year monitoring event was conducted in 2024.

Figure D-182. Location of Hampton Gator Creek (DMIT-145).

Figure D-183. Hampton Gator Creek (DMIT-145), May 2023.

Figure D-184. Hampton Gator Creek (DMIT-145), May 2023.

Figure D-185. Hampton Gator Creek (DMIT-145), May 2023.

Figure D-186. Hampton Gator Creek (DMIT-145), May 2023.

Hilochee Osprey West (DMIT-146)

Hilochee Osprey West was established as a DMIT long-term wetlands monitoring site in 2023. The site is accessed at the Highway 557 entrance to the Hilochee WMA Osprey Unit just south of I-4 (**Figure D-187**). This Plains wetland was determined to be Not Stressed in April 2023; the area surrounding all three monitoring transects was assessed (**Figures D-188, D-189, and D-190**).

Figure D-187. Location of Hilochee Osprey West (DMIT-146).

Figure D-188. Hilochee Osprey West (DMIT-146), April 2023.

Figure D-189. Hilochee Osprey West (DMIT-146), April 2023.

Figure D-190. Hilochee Osprey West (DMIT-146), April 2023.

Lake Marie (DMIT-147)

Lake Marie is a Ridge lake located within a park in Dundee adjacent to Lake Marie Boulevard (**Figure D-191**). It was assessed in November 2022. The site was determined to be Not Stressed, and the lake levels were way above normal, most likely as a result of Hurricane Ian passing over the area in September 2022 (**Figures D-192, D-193, D-194, and D-195**). Lake Marie will be established as a DMIT long-term wetlands monitoring site in 2025.

Figure D-191. Location of Lake Marie (DMIT-147).

Figure D-192. Lake Marie (DMIT-147), November 2022.

Figure D-193. Lake Marie (DMIT-147), November 2022.

Figure D-194. Lake Marie (DMIT-147), November 2022.

Figure D-195. Lake Marie (DMIT-147), November 2022.

Lake Marion Creek Scrub (DMIT-148)

Lake Marion Creek Scrub was established as a DMIT long-term wetlands monitoring site in 2023. It is located on the Lake Marion Creek Horseshoe Scrub Tract, owned and managed by the SWFWMD and SFWMD. This Ridge wetland is accessed through the tract entrance at the end of Horseshoe Creek Road in Polk County (**Figure D-196**). The area along the three monitored transects was assessed in April 2023, and the site was determined to be Not Stressed (**Figures D-197, D-198, and D-199**). The site has a cluster of wells to monitor the Lower Floridan, Upper Floridan, and Surficial aquifers. Since the wetland edge elevation was determined during the 2023 DMIT transect site set up, this site can most likely be included in the Class 1 wetlands dataset for the analysis in support of the 2030 CFWI RWSP depending on the period of record of data collection for the SA monitoring well.

Figure D-196. Location of Lake Marion Creek Scrub (DMIT-148).

Figure D-197. Lake Marion Creek Scrub (DMIT-148), April 2023.

Figure D-198. Lake Marion Creek Scrub (DMIT-148), April 2023.

Figure D-199. Lake Marion Creek Scrub (DMIT-148), April 2023.

Lake Maude (DMIT-149)

Lake Maude is located in Winter Haven; this Ridge lake was assessed in September 2022 along the south shore (**Figure D-200**). The lake levels were above normal, and the site was determined to be Not Stressed (**Figures D-201, D-202, and D-203**). The site was established as a DMIT long-term wetlands monitoring site in 2023, and three transects were set up within Lake Maude Nature Park. Lake Maude is a eutrophic lake, and trash was observed along the shoreline within the park boundaries. Since there is a staff gauge in the lake and the wetland edge elevation was determined during DMIT site set up in 2023, the site may be able to be included in the Class 1 wetlands dataset for the analysis in support of the 2030 CFWI RWSP, depending on the period of record of water level data. For safety reasons, caution should be taken when visiting this site, and it should not be visited alone.

Figure D-200. Location of Lake Maude (DMIT-149).

Figure D-201. Lake Maude (DMIT-149), September 2022.

Figure D-202. Lake Maude (DMIT-149), September 2022.

Figure D-203. Lake Maude (DMIT-149), September 2022.

Lake Ned (DMIT-150)

Lake Ned will be established as a DMIT long-term wetlands monitoring site in 2025, and transects will be set up along the eastern shoreline at the Street Audubon Nature Center located on Lameraux Road off Cypress Gardens Road (**Figure D-204**). The Ridge lake was assessed in November 2022 and was determined to be Not Stressed (**Figures D-205, D-206, and D-207**). Because the lake levels were way above normal, most likely as a result of Hurricane Ian passing over the area in September 2022, and there were numerous downed trees, the assessment could not be done at the Street Audubon Nature Center. Instead, the assessment was done at Lake Ned Park on the west side of the lake. Since there is a staff gauge in the lake (SID 25363), once the wetland edge elevation is determined during DMIT site set up in 2025, the site may be able to be included in the Class 1 wetlands dataset for the analysis in support of the 2030 CFWI RWSP, depending on the period of record of data collection.

Figure D-204. Location of Lake Ned (DMIT-150).

Figure D-205. Lake Ned (DMIT-150), November 2022.

Figure D-206. Lake Ned (DMIT-150), November 2022.

Figure D-207. Lake Ned (DMIT-150), November 2022.

Richloam Upper Little Withlacoochee (DMIT-152)

Richloam Upper Little Withlacoochee was established as a DMIT long-term wetlands monitoring site in 2019, and the 5-year monitoring event was conducted in 2024. This large Plains wetland in the upper portion of the Little Withlacoochee River is located in the Richloam Tract of the Withlacoochee State Forest or Richloam WMA that is just to the north of the SWFWMD's Green Swamp Wilderness Preserve. This wetland is located west of the Van Fleet Trail and north of South Bay Lake Road (**Figure D-208**); it is accessed by traveling to the end of paved South Bay Lake Road near the Bay Lake Trailhead of the Van Fleet Trail. This site was assessed in February 2023 along the monitoring transect located off of South Bay Lake Road; it was determined to be Not Stressed (**Figures D-209, D-210, and D-211**).

Since the wetland edge elevation was determined during the 2019 DMIT transect site set up and again during the 2024 5-year monitoring event, this site can most likely be included in the Class 1 wetlands dataset for the analysis in support of the 2030 CFWI RWSP, depending on the period of record of data collection for existing the SA monitoring well, located nearby on the south side of South Bay Lake Road.

Figure D-208. Location of Richloam Upper Little Withlacoochee (DMIT-152).

Figure D-209. Richloam Upper Little Withlacoochee (DMIT-152), February 2023.

Figure D-210. Richloam Upper Little Withlacoochee (DMIT-152), February 2023.

Figure D-211. Richloam Upper Little Withlacoochee (DMIT-152), February 2023.

Saddle Blanket Scrub 1 (DMIT-153)

Three sites included in the DMIT long-term wetlands monitoring program are located on The Nature Conservancy's Saddle Blanket Scrub Preserve located off of Avon Park Cutoff Road south of Frostproof. Saddle Blanket Scrub 2 (DMIT-154) is a Class 1 bayhead Ridge wetland described in Appendix B; Saddle Blanket Scrub 1 is described below, while Saddle Blanket Scrub 3 is described in the next section (**Figure D-212**).

Saddle Blanket Scrub 1 is a shallow marsh that is a Ridge wetland. It was established as a DMIT long-term wetlands monitoring site in 2022. This wetland was assessed in April 2022 and was determined to be Not Stressed (**Figures D-213, D-214, and D-215**). During the assessment, hog damage was observed.

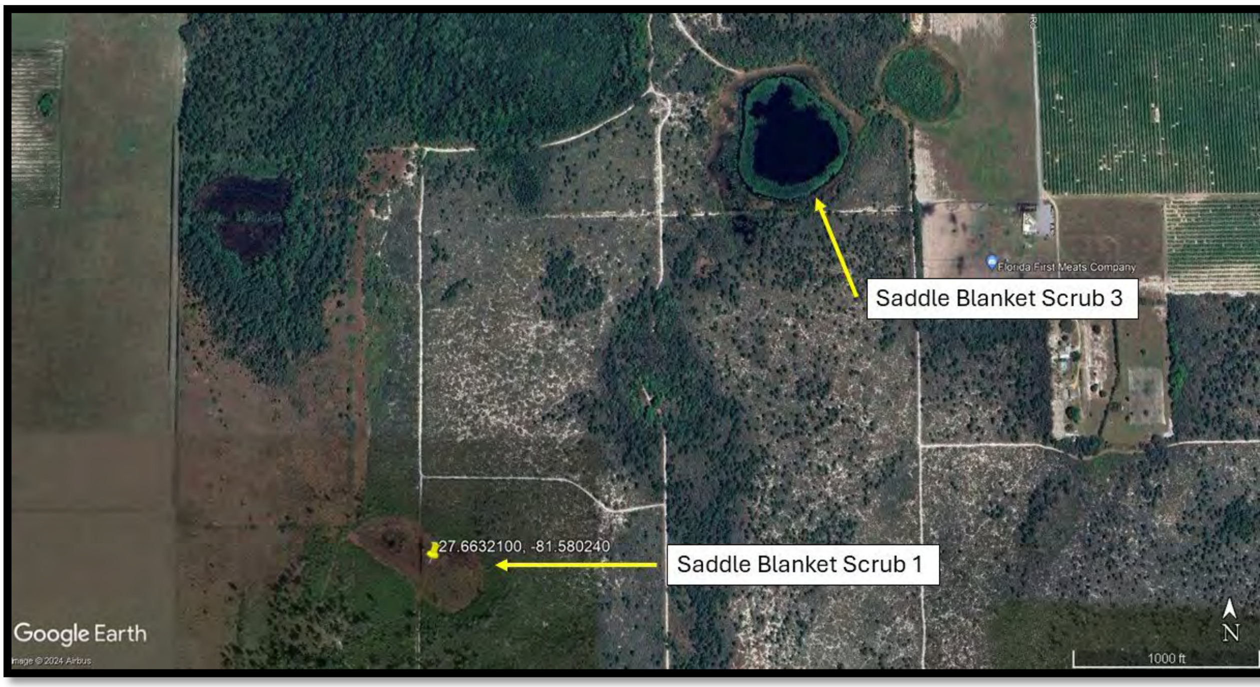

Figure D-212. Location of Saddle Blanket Scrub 1 (DMIT-153) and Saddle Blanket Scrub 3 DMIT-155).

Figure D-213. Saddle Blanket Scrub 1 (DMIT-153), April 2022.

Figure D-214. Saddle Blanket Scrub 1 (DMIT-153), April 2022.

Figure D-215. Saddle Blanket Scrub 1 (DMIT-153), April 2022.

Saddle Blanket Scrub 3 (DMIT-155)

Saddle Blanket Scrub 3 was established as a DMIT long-term wetlands monitoring site in 2022; it is a Ridge lake located near the entrance to The Nature Conservancy's Saddle Blanket Scrub Preserve (**Figure D-212**). This lake was assessed in April 2022 and was determined to be Not Stressed (**Figures D-216, D-217, and D-218**). During the assessment, hog damage and rooting was observed along the north shoreline, and water levels were observed to be below normal.

Figure D-216. Saddle Blanket Scrub 3 (DMIT-155), April 2022.

Figure D-217. Saddle Blanket Scrub 3 (DMIT-155), April 2022.

Figure D-218. Saddle Blanket Scrub 3 (DMIT-155), April 2022.

Pasture Reserve 1 (DMIT-156)

Three wetlands within Lake County's Pasture Reserve located on Lake Erie Road have been included in the DMIT long-term wetlands monitoring program (**Figure D-219**). Pasture Reserve 1 is described below, and Pasture Reserve 2 and 3 are described in the sections that follow. There is a SWFWMD lock located on the main entrance gate for access, or a combination can be obtained from Lake County. Although conditions have improved since the county began restoration activities in the uplands, extensive blackberry growth may make accessing the wetlands difficult in some locations.

Pasture Reserve 1 is a Plains wetland is in the upper portion of the Green Swamp that was established as a DMIT long-term wetlands monitoring site in 2019. The 5-year monitoring event was conducted at this site in 2024. This site has a thick duff layer and numerous hummocks; a historical rim ditch is also located along portions of this wetland. Pasture Reserve 1 was assessed in February 2023 and was determined to be Not Stressed (**Figures D-220, D-221, and D-222**).

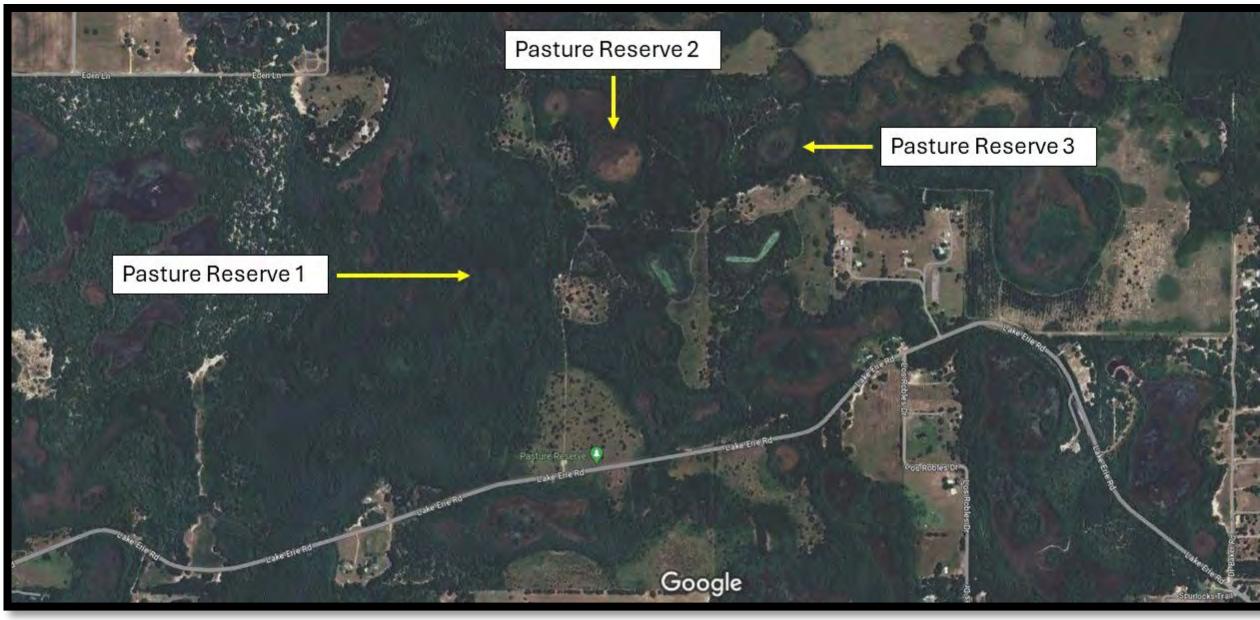

Figure D-219. Location of Pasture Reserve 1 (DMIT-156), Pasture Reserve 2 (DMIT-157), and Pasture Reserve 3 (DMIT-158).

Figure D-220. Pasture Reserve 1 (DMIT-156), February 2023.

Figure D-221. Pasture Reserve 1 (DMIT-156), February 2023.

Figure D-222. Pasture Reserve 1 (DMIT-156), February 2023.

Pasture Reserve 2 (DMIT-157)

Pasture Reserve 2 was established as a DMIT long-term wetlands monitoring site in 2019, and the 5-year monitoring event was conducted in 2024. This Plains wetland, a high-quality marsh, was assessed in the area of Transect 3 in February 2023 (**Figure D-219**). The marsh was determined to be Not Stressed (**Figures D-223, D-224, and D-225**).

Figure D-223. Pasture Reserve 2 (DMIT-157), February 2023.

Figure D-224. Pasture Reserve 2 (DMIT-157), February 2023.

Figure D-225. Pasture Reserve 2 (DMIT-157), February 2023.

Pasture Reserve 3 (DMIT-158)

This Plains wetland was assessed in February 2023 and was determined to be Not Stressed (**Figures D-226, D-227, and D-228**). The assessment of the marsh (**Figure D-219**) was done in the area of Transect 2. Pasture Reserve 3 was established as a DMIT long-term wetlands monitoring site in 2019, and the 5-year monitoring event was conducted in 2024.

Figure D-226. Pasture Reserve 3 (DMIT-158), February 2023.

Figure D-227. Pasture Reserve 3 (DMIT-158), February 2023.

Figure D-228. Pasture Reserve 3 (DMIT-158), February 2023.

Tiger Creek 1 (DMIT-159)

Two DMIT long-term wetlands monitoring sites were established at The Nature Conservancy's Tiger Creek Preserve off Pfundstein Road in Babson Park in 2022 (**Figure D-229**). Tiger Creek 1 is described below, while Tiger Creek 2 is described in the next section.

Tiger Creek 1 is a Ridge lake that is located behind the preserve's office. The lake has steep side slopes so the shoreline wetlands are limited. There was a berm constructed historically separating the lake from an associated marsh along the southern edge. This entire site was assessed in April 2022 and was determined to be Not Stressed (**Figures D-230, D-231, and D-232**).

Figure D-229. Location of Tiger Creek 1 (DMIT-159) and Tiger Creek 2 (DMIT-160).

Figure D-230. Tiger Creek 1 (DMIT-159), April 2022.

Figure D-231. Tiger Creek 1 (DMIT-159), April 2022.

Figure D-232. Tiger Creek 1 (DMIT-159), April 2022.

Tiger Creek 2 (DMIT-160, Formerly SW-H1)

Tiger Creek 2 is located northeast of Tiger Creek 1 (**Figure D-229**). In 2022, DMIT transects were set up in the northern lobe of this high-quality, Ridge wetland. A 4x4 vehicle with good off-road tires is required to traverse the deep sugar sand trails to access this site. This site was assessed along the transect areas in April 2022, and the marsh was determined to be Not Stressed (**Figures D-233, D-234, and D-235**).

Figure D-233. Tiger Creek 2 (DMIT-160), April 2022.

Figure D-234. Tiger Creek 2 (DMIT-160), April 2022.

Figure D-235. Tiger Creek 2 (DMIT-160), April 2022.

Hickory Lake (DMIT-199)

In 2025, transects will be established at Polk County's Hickory Lake Scrub located on the South Scenic Highway in Frostproof (**Figure D-236**) to include this site in the DMIT long-term wetlands monitoring program. Hickory Lake was assessed in July 2023 within the preserve's boundaries waterward of the SA monitoring well behind the bench. This Ridge lake has Fair habitat; there is a thick band of cattails around the shoreline. The site was determined to be Not Stressed (**Figures D-237, D-238, and D-239**).

Figure D-236. Location of Hickory Lake (DMIT-199).

Figure D-237. Hickory Lake (DMIT-199), July 2023.

Figure D-238. Hickory Lake (DMIT-199), July 2023.

Figure D-239. Hickory Lake (DMIT-199), July 2023.

Bartow Airport (Old DMIT-198)

This Plains wetland is located west of the runways at Bartow Executive Airport near U.S Highway 17 (**Figure D-240**). It was selected as a potential site to include in the DMIT long-term wetlands monitoring program. However, it was not selected as a DMIT site for the following reasons: the wetland is stable, but the hydrology is altered because of a ditch that drains the wetland; the soils around the wetland have been disturbed historically; and there was concern that maintenance mowing would disturb established wetland transects. This wetland was assessed in September 2022; it was determined to be Not Stressed (**Figures D-241, D-242, and D-243**).

Figure D-240. Location of Bartow Airport (Old DMIT-198).

Figure D-241. Bartow Airport (Old DMIT-198), September 2022.

Figure D-242. Bartow Airport (Old DMIT-198), September 2022.

Figure D-243. Bartow Airport (Old DMIT-198), September 2022.

Near Teneroc Transportation Facility (SW-AB)

Located off Saddle Creek Road in Lakeland (**Figure D-244**), this Plains wetland was assessed in March 2023. This marsh provides good habitat and was determined to be Not Stressed (**Figures D-245, D-246, and D-247**). It was considered as a potential site to include in the DMIT long-term wetlands monitoring program. However, there was concern that the adjacent stormwater ponds could affect the hydrology of the wetland, and finding suitable transect locations was difficult; therefore, this wetland was not selected as a DMIT site.

Figure D-244. Location of Near Teneroc Transportation Facility (SW-AB).

Figure D-245. Near Teneroc Transportation Facility (SW-AB), March 2023.

Figure D-246. Near Teneroc Transportation Facility (SW-AB), March 2023.

Figure D-247. Near Teneroc Transportation Facility (SW-AB), March 2023.

Near County Landfill (SW-AC)

This Plains wetland is located on Polk County Landfill property in Winter Haven adjacent to the Polk Parkway (**Figure D-248**). It is accessible via De Castro Road, and permission must be obtained from the landfill to access the site, which involves visiting the office upon arrival. This marsh was assessed in March 2023 and was determined to be Not Stressed (**Figures D-249, D-250, and D-251**). Possible expansion of the landfill or road widening could affect this wetland in the future due to its location.

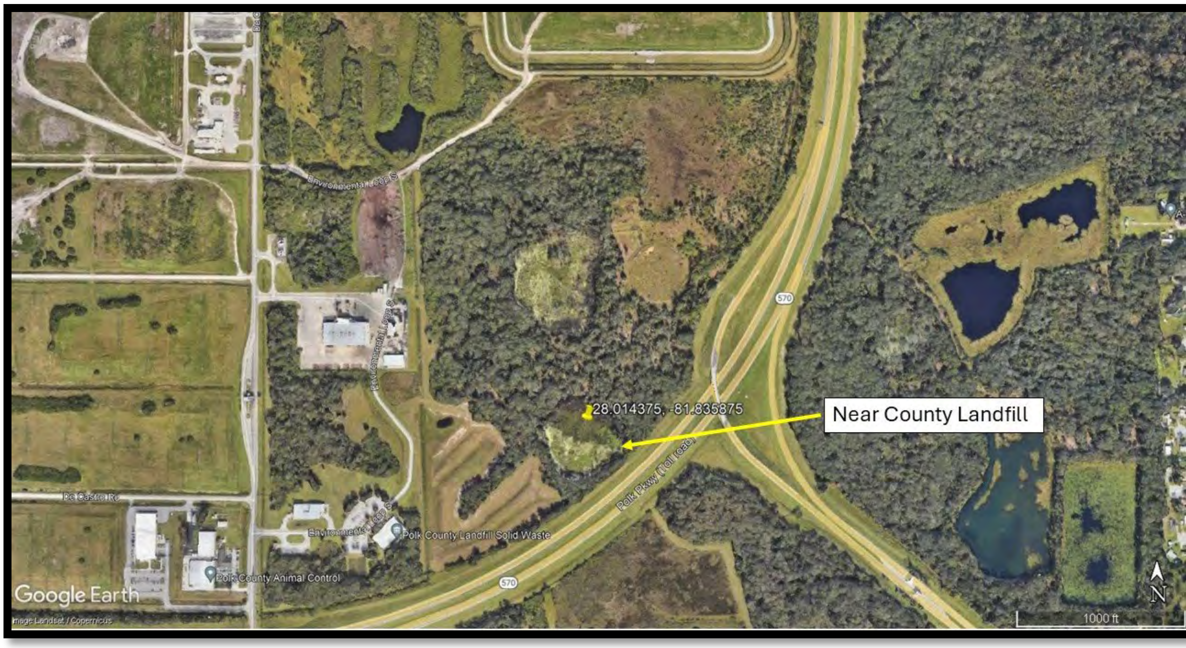

Figure D-248. Location of Near County Landfill Facility (SW-AC).

Figure D-249. Near County Landfill (SW-AC), March 2023.

Figure D-250. Near County Landfill (SW-AC), March 2023.

Figure D-251. Near County Landfill (SW-AC), March 2023.

CRUSA T9 (SW-AE)

This marsh is located off Sheffield Road in Winter Haven on private orange grove property (**Figure D-252**). It is accessible via a sand road, and this Plains wetland is completely surrounded by orange groves and ringed with willow trees. It was assessed in March 2023 and was determined to be Not Stressed (**Figures D-253, D-254, D-255, and D-256**).

Figure D-252. Location of CRUSA T9 (SW-AE).

Figure D-253. CRUSA T9 (SW-AE), March 2023.

Figure D-254. CRUSA T9 (SW-AE), March 2023.

Figure D-255. CRUSA T9 (SW-AE), March 2023.

Figure D-256. CRUSA T9 (SW-AE), March 2023.

W of Lake Weohyakapka and Tiger Creek (SW-AI)

This Ridge wetland is located in the area immediately to the north of Lake Wales Ridge State Forest Walk-in-the Water Tract. It can be reached by traveling down unpaved Jewell Lane, which is accessible via King Trail (**Figure D-257**). The wetland is located on private property behind a fence containing numerous "No Trespassing" signs and can be observed from Jewell Terrace. It was assessed in August 2023 and determined to be Stressed (**Figures D-258, D-259, and D-260**). Even though wetlands in the immediate area had standing water, this wetland was dry and provided poor habitat (the soils could have been saturated because of recent heavy rain). In addition, little wetland vegetation was observed.

Figure D-257. Location of W of Lake Weohyakapka and Tiger Creek (SW-AI).

Figure D-258. W of Lake Weohyakapka and Tiger Creek (SW-AI), August 2023.

Figure D-259. W of Lake Weohyakapka and Tiger Creek (SW-AI), August 2023.

Figure D-260. W of Lake Weohyakapka and Tiger Creek (SW-AI), August 2023.

On Lake Wales Ridge SW of Lake Pierce (SW-AK)

This Ridge wetland was not accessible since it was deep within a large tract of fenced private property. Therefore, this site was relocated to a similar marsh on the same parcel behind Lake Pierce Ranchettes Park on Fast Trot Trail in Lake Wales (**Figure D-261**), which could be assessed. This shallow marsh was solid maidencane and was assessed in August 2023. The site was determined to be Not Stressed (**Figures D-262, D-263, and D-264**).

Figure D-261. Location of On Lake Wales Ridge SW of Lake Pierce (SW-AK).

Figure D-262. On Lake Wales Ridge SW of Lake Pierce (SW-AK), August 2023.

Figure D-263. On Lake Wales Ridge SW of Lake Pierce (SW-AK), August 2023.

Figure D-264. On Lake Wales Ridge SW of Lake Pierce (SW-AK), August 2023.

On Lake Wales Ridge SW of Lake Pierce (SW-AL)

This Ridge wetland is located adjacent to Masterpiece Road in Lake Wales (**Figure D-265**). It is located on a large private parcel and viewable from the road. The site is a good quality, two-lobed marsh with a deep, lake-like area. It was assessed in August 2023 and was determined to be Not Stressed (**Figures D-266, D-267, and D-268**). A few cattle were in the fenced pasture area where the wetland is located, and water levels in the marsh were below normal.

Figure D-265. Location of On Lake Wales Ridge SW of Lake Pierce (SW-AL).

Figure D-266. On Lake Wales Ridge SW of Lake Pierce (SW-AL), August 2023.

Figure D-267. On Lake Wales Ridge SW of Lake Pierce (SW-AL), August 2023.

Figure D-268. On Lake Wales Ridge SW of Lake Pierce (SW-AL), August 2023.

N Lake Pierce (SW-AN)

This large marsh can be accessed from Lake Hatchineha Road and is located southeast of Haines City (**Figure D-269**). This Ridge wetland was assessed in August 2023, and it was determined to be Not Stressed (**Figures D-270, D-271, and D-272**). Water levels were below normal, and this large marsh contained lake-like areas. It is located on private property and can be seen from the gate across the private driveway. During the assessment, permission from the property owners to access the wetland was given.

Figure D-269. Location of N Lake Pierce (SW-AN).

Figure D-270. N Lake Pierce (SW-AN), August 2023.

Figure D-271. N Lake Pierce (SW-AN), August 2023.

Figure D-272. N Lake Pierce (SW-AN), August 2023.

E of U.S. 17/U.S. 92 (SW-AO)

This Ridge wetland is located at the end of Snell Creek Road at the intersection with Pink Apartment Road in Davenport in an old residential area (**Figure D-273**). The two-lobed marsh was assessed in August 2023 and was determined to be Not Stressed (**Figures D-274, D-275, and D-276**). It is located on private property but can be accessed from Pink Apartment Road or behind the church.

Figure D-273. Location of E of U.S. 17/U.S. 92 (SW-AO).

Figure D-274. E of U.S. 17/U.S. 92 (SW-AO), August 2023.

Figure D-275. E of U.S. 17/U.S. 92 (SW-AO), August 2023.

Figure D-276. E of U.S. 17/U.S. 92 (SW-AO), August 2023.

Along Loughman Road (CR-54) (SW-AQ)

This marsh is located at the intersection of Ronald Reagan Parkway and Pine Tree Trail in Davenport (**Figure D-277**). With the exception of some adjacent marshes and stormwater ponds, this Ridge wetland is surrounded by residential development. This Ridge wetland was assessed in August 2023 and was determined to be Not Stressed (**Figures D-278, D-279, D-280, and D-281**).

Figure D-277. Location of Along Loughman Road (CR-54) (SW-AQ).

Figure D-278. Along Loughman Road (CR-54) (SW-AQ), August 2023.

Figure D-279. Along Loughman Road (CR-54) (SW-AQ), August 2023.

Figure D-280. Along Loughman Road (CR-54) (SW-AQ), August 2023.

Figure D-281. Along Loughman Road (CR-54) (SW-AQ), August 2023.

S of I-4 Loughman Road Interchange (SW-AR)

This Ridge wetland is located south of the intersection of I-4 and Ronald Reagan Parkway (**Figure D-282**). Accessing this wetland located on private property was a bit challenging. Permission was given by the homeowner at 247 Valentino Court in Davenport to access the wetland. This wetland was assessed in August 2023 and was determined to be Not Stressed (**Figures D-283, D-284, and D-285**).

Figure D-282. Location of S of I-4 Loughman Road Interchange (SW-AR).

Figure D-283. S of I-4 Loughman Road Interchange (SW-AR), August 2023.

Figure D-284. S of I-4 Loughman Road Interchange (SW-AR), August 2023.

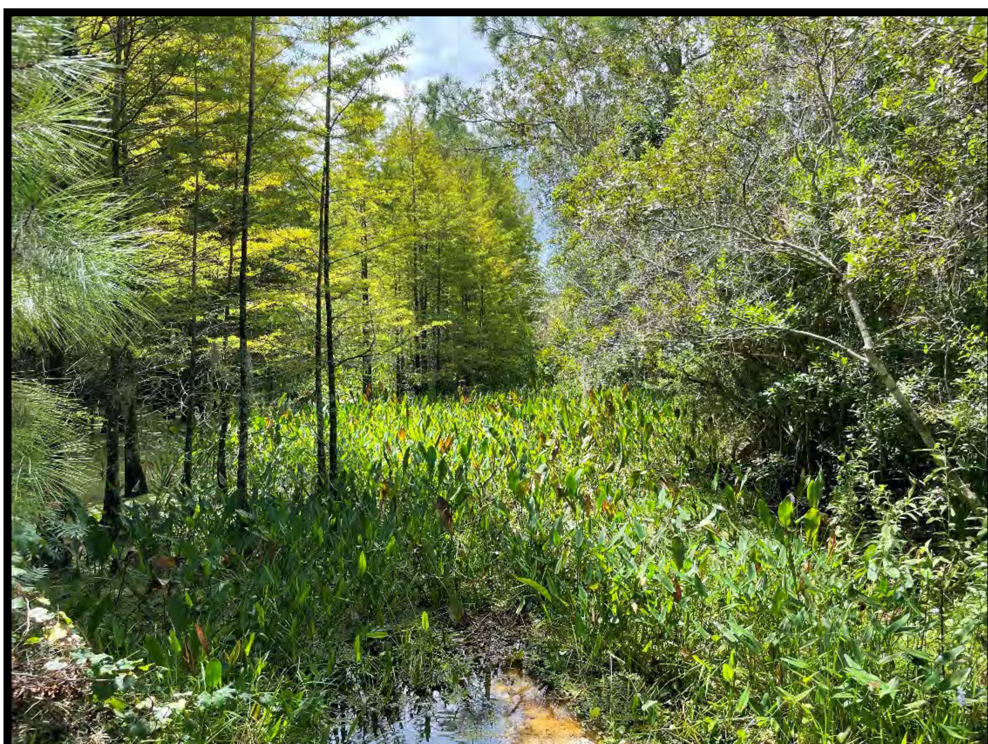

Figure D-285. S of I-4 Loughman Road Interchange (SW-AR), August 2023.

Along Loughman Road (SW-AS)

This Ridge wetland is located adjacent to Ronald Reagan Parkway in Davenport (**Figure D-286**). It is accessible from the cul-de-sac located at the end of Oxford Road in an old subdivision. The wetland was assessed in August 2023; it was determined to be Stressed (**Figures D-287, D-288, D-289, and D-290**). Shrubs, invasive plants, and red maple are encroaching into this wetland since it appeared to have altered hydrology. Soil subsidence was observed, and there was evidence of higher water levels in the past as compared to current conditions.

Figure D-286. Location of Along Loughman Road (SW-AS).

Figure D-287. Along Loughman Road (SW-AS), August 2023.

Figure D-288. Along Loughman Road (SW-AS), August 2023.

Figure D-289. Along Loughman Road (SW-AS), August 2023.

Figure D-290. Along Loughman Road (SW-AS), August 2023.

S of Loughman Road (SW-AT3)

This Ridge wetland is located off of Ronald Reagan Parkway in an area of intense residential development in Davenport (**Figure D-291**). The marsh is located adjacent to other wetlands, as well as the cul-de-sac at the north end of Suffolk Place, which is accessible from the parkway via May Fair Boulevard to Buckingham Drive to Norfolk Drive. This wetland was assessed in the cul-de-sac area in August 2023 and was determined to be Not Stressed (**Figures D-292, D-293, D-294, D-295, and D-296**).

Figure D-291. Location of S of Loughman Road (SW-AT3).

Figure D-292. S of Loughman Road (SW-AT3), August 2023.

Figure D-293. S of Loughman Road (SW-AT3), August 2023.

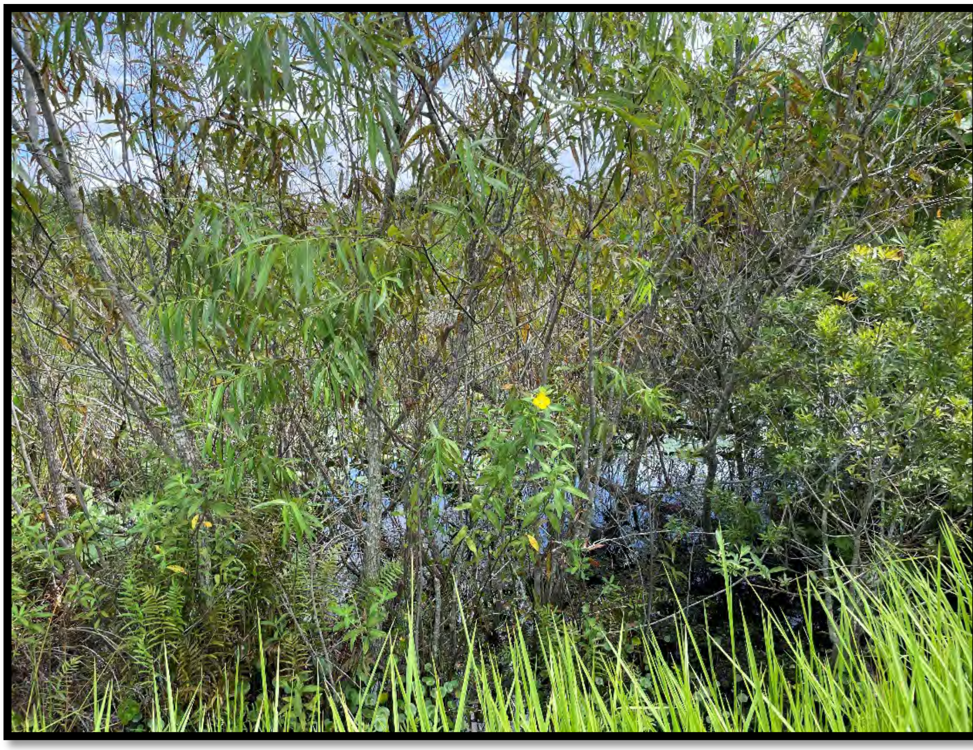

Figure D-294. S of Loughman Road (SW-AT3), August 2023.

Figure D-295. S of Loughman Road (SW-AT3), August 2023.

Figure D-296. S of Loughman Road (SW-AT3), August 2023.

Hilochee (SW-CC)

This isolated cypress dome is accessible via the entrance to FWC's Hilochee WMA Osprey Unit just northwest of I-4 off Old Grade Road (**Figure D-297**). Note that the gate combination needs to be obtained from FWC prior to visiting this site. It was originally selected as a site to include in the DMIT long-term wetlands monitoring program; however, construction to expand the I-4 interchange impacted a portion of this wetland. This wetland was replaced by DMIT-146, which is located within the same WMA on the other side of I-4. This Plains wetland was assessed in August 2023; it was determined to be Not Stressed. Unfortunately, no photos were taken during the assessment.

Figure D-297. Location of Hilochee (SW-CC).

Little Dinner Lake Wetland (SW-D1)

This wetland is located west of Spirit Lake off Spirit Lake Road (**Figure D-298**). This Plains wetland was assessed in the area at the end of Country Place in March 2023. Invasive and upland species have encroached into this wetland, and it was determined to be Stressed (**Figures D-299, D-300, and D-301**).

Figure D-298. Location of Little Dinner Lake Wetland (SW-D1).

Figure D-299. Little Dinner Lake Wetland (SW-D1), March 2023.

Figure D-300. Little Dinner Lake Wetland (SW-D1), March 2023.

Figure D-301. Little Dinner Lake Wetland (SW-D1), March 2023.

NERUSA – Pamplin Site (SW-EE)

This Ridge wetland is located adjacent to I-4 in an area of intense residential development in Davenport (**Figure D-302**). It was accessed via Champions Gate Boulevard. This marsh is located behind an apartment complex on Longboat Drive, which was under construction during the assessment in August 2023. An existing staff gauge was observed in the marsh, and it was determined to be Not Stressed (**Figures D-303, D-304, D-305, D-306, and D-307**). There was quite a bit of construction debris located along the wetland edge, and because of its location and the adjacent development, the quality of this nice marsh will most likely degrade over time. Numerous dead or dying red maples, which encroached into the marsh during dry conditions, were observed.

Figure D-302. Location of NERUSA – Pamplin Site (SW-EE).

Figure D-303. NERUSA – Pamplin Site (SW-EE), August 2023.

Figure D-304. NERUSA – Pamplin Site (SW-EE), August 2023.

Figure D-305. NERUSA – Pamplin Site (SW-EE), August 2023.

Figure D-306. NERUSA – Pamplin Site (SW-EE), August 2023.

Figure D-307. NERUSA – Pamplin Site (SW-EE), August 2023.

Dick's Bros. Wetland (SW-F1)

This marsh is located adjacent to Hughes Road between U.S. Highway 17 and U.S. Highway 27 in Haines City (**Figure D-308**). This Ridge wetland was assessed in August 2023; it was determined to be Not Stressed (**Figures D-309, D-310, D-311, D-312, and D-313**). The marsh is surrounded by orange groves, with many of them being developed into residential subdivisions, which may cause the quality of this marsh to change.

Figure D-308. Location of Dick’s Bros. Wetland (SW-F1).

Figure D-309. Dick’s Bros. Wetland (SW-F1), August 2023.

Figure D-310. Dick's Bros. Wetland (SW-F1), August 2023.

Figure D-311. Dick's Bros. Wetland (SW-F1), August 2023.

Figure D-312. Dick's Bros. Wetland (SW-F1), August 2023.

Figure D-313. Dick's Bros. Wetland (SW-F1), August 2023.

NERUSA – Loma Linda Well (SW-FF)

This marsh is located in the Davenport area (**Figure D-314**). It was difficult to find; from Ronald Reagan Parkway, take Briargrove Avenue to Grovepark Drive to Thornbush Parkway. This Ridge wetland was accessed along Thornbush Parkway. It was assessed in August 2023 and was determined to be Not Stressed. No photographs were taken during the assessment.

Figure D-314. Location of NERUSA – Loma Linda Well (SW-FF).

Standard Mine (SW-GG)

This marsh is located in the Watersong development in Davenport on U.S. Highway 17/U.S. Highway 92 (**Figure D-315**). This Ridge wetland was accessed by parking at the cul-de-sac at the end of Orange Cosmos Boulevard and walking along the property boundary of 1098 Orange Cosmos Boulevard and the adjacent stormwater pond. It was assessed in August 2023 and was determined to be Not Stressed (**Figures D-316, D-317, D-318, and D-319**).

Figure D-315. Location of Standard Mine (SW-GG).

Figure D-316. Standard Mine (SW-GG), August 2023.

Figure D-317. Standard Mine (SW-GG), August 2023.

Figure D-318. Standard Mine (SW-GG), August 2023.

Figure D-319. Standard Mine (SW-GG), August 2023.

Tiger Creek Preserve - TNC (SW-H1A)

This wetland is located at The Nature Conservancy's Tiger Creek Preserve off Pfundstein Road in Babson Park, where two DMIT long-term wetlands monitoring sites have been established (**Figure D-320**). Since this site is located deep within the interior of the preserve, a 4x4 vehicle with good off-road tires is required to traverse the deep sugar sand trails to get to this site. This Ridge wetland was assessed in April 2022 and was determined to be Not Stressed; unfortunately, no photographs were taken.

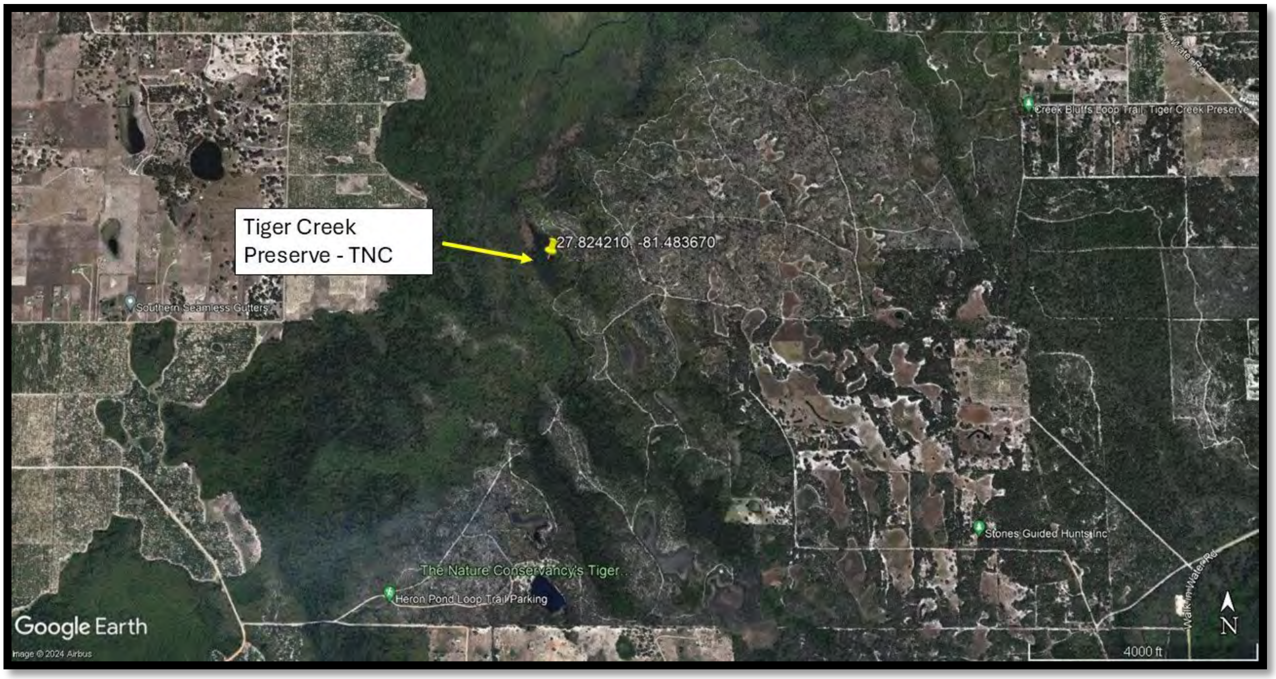

Figure D-320. Location of Tiger Creek Preserve – TNC (SW-H1A).

Cypress Creek 199, W17 Sentry Wetland (SW-LE)

Cypress Creek 199, W17 Sentry Wetland is a groundwater-dominated, cypress swamp located on the SWFMWD's Cypress Creek Preserve in Central Pasco County. It is also within Tampa Bay Water's Cypress Creek Wellfield, which is authorized to withdraw groundwater under WUP No. 200011771.001. This Plains wetland was determined to be Stressed in the analyses conducted in support of both the 2015 and 2020 CFWI RWSPs; however, during the July 2022 assessment, while historical impacts were noted, it was determined to be Not Stressed (**Figures D-321, D-322, D-323, D-324, and D-325**). The July 2022 assessment was conducted from the north side of the wetland (**Figure D-326**). The wetland is accessed from Pump Station Road and through a locked gate leading into the wellfield.

Figure D-321. Cypress Creek 199, W17 Sentry Wetland (SW-LE), March 2022.

Figure D-322. Cypress Creek 199, W17 Sentry Wetland (SW-LE), March 2022.

Figure D-323. Cypress Creek 199, W17 Sentry Wetland (SW-LE), March 2022.

Figure D-324. Cypress Creek 199, W17 Sentry Wetland (SW-LE), March 2022.

Figure D-325. Cypress Creek 199, W17 Sentry Wetland (SW-LE), March 2022.

Figure D-326. Location of Cypress Creek 199, W17 Sentry Wetland (SW-LE). Red circle indicates the location of the 2022 stress assessment.

Groundwater pumping at the wellfield began in 1976. Pumping quantities peaked in 2001, and the wetland was hydrologically impacted (e.g., reduced hydroperiod and water levels). From 2001 to 2003, groundwater withdrawals at the wellfield were substantially reduced, and reduced pumping has been maintained to date. However, the pumping rate currently averages approximately 15 million gallons per day.

The SWFWMD has recorded SA water levels in the wetland twice each month since 2010. In addition, annual WAP assessments of the wetland have been conducted since 2005, as part of the Northern Tampa Bay Recovery Assessment. The SWFWMD has established a Minimum Wetland Level of 63.1 ft. (NGVD1929) for this wetland. In 2023, this wetland was meeting its minimum level. Water level and vegetation data collection is on-going as Tampa Bay Water is continuing to assess recovery of the wetland.

While this wetland was included in the Class 1 wetlands dataset for the analyses conducted in support of both the 2015 and 2020 CFWI RWSPs, it was moved from the Class 1 wetlands dataset to the Class 2 wetlands dataset for the analyses conducted in support of the 2025 CFWI RWSP. Analyses of water level data for the selected period of record indicated that the data were anomalous and not representative of groundwater-dominated wetlands within the CFWI Planning Area since both stressed and unstressed periods were included.

Green Swamp 5, 302 (SW-LK)

Green Swamp 5 is located in South Sumter County and is a groundwater-dominated, cypress wetland. This Plains wetland is located within the SWFWMD’s Green Swamp Wildlife Preserve East Tract (**Figure D-327**). The wetland is accessed from State Road 471 through a locked gate, turning east on Main Grade, an unpaved, lime rock road. From Main Grade, turn north on Tanic Grade, then east on Three Run Grade. An unimproved trail, located on the northwest side of Three Run Grade and approximately 0.3 mile past the intersection of Three Mile Grade and Race Track Road, leads to the wetland (**Figure D-327**).

Figure D-327. Location of Green Swamp 5, 302 (SW-LK). Red circle indicates the location of the 2023 stress assessment.

The SWFWMD has recorded SA water levels in the wetland monthly since 1999. As part of the Northern Tampa Bay Recovery Assessment, annual vegetation assessments of the wetland have been conducted since 2005 using the WAP. There are no known hydrologic alterations to the wetland or groundwater withdrawals in the vicinity. The nearest public supply wellfield (City of Lakeland Northeast Wellfield) is approximately 17 miles away.

Green Swamp 5, 302 was determined to be Not Stressed in the analyses conducted in support of both the 2015 and 2020 CFWI RWSPs. It was also determined to be Not Stressed in February 2023 (**Figures D-328, D-329, D-330, and D-331**). The area around the wetland had been recently burned, and the fire encroached into the wetland area.

While this wetland was included in the Class 1 wetlands dataset for the analyses conducted in support of both the 2015 and 2020 CFWI RWSPs, it was moved from the Class 1 wetlands dataset to the Class 2 wetlands dataset for the analyses conducted in support of the 2025 CFWI RWSP. Analyses of water level data for the selected period of record indicated that the data were anomalous and not representative of groundwater-dominated wetlands within the CFWI Planning Area.

Figure D-328. Green Swamp 5, 302 (SW-LK), February 2023.

Figure D-329. Green Swamp 5, 302 (SW-LK), February 2023.

Figure D-330. Green Swamp 5, 302 (SW-LK), February 2023.

Figure D-331. Green Swamp 5, 302 (SW-LK), February 2023.

Eagle Lake (SW-N7)

This Ridge lake is located in Eagle Lake in Polk County. It was assessed in March 2023 from Eagle Lake Park located at the end of West Eagle Avenue (**Figure D-332**). The lake levels were above normal, and it was determined to be Not Stressed (**Figures D-333, D-334, and D-335**).

Minimum Levels were originally established for Eagle Lake in 2007. They were re-evaluated for the lake, and revised levels, which include a Minimum Level of 129.1 ft. NGVD29 or 128.2 ft. NAVD88 and a High Minimum Level of 131.2 ft. NGVD29 or 130.3 NAVD88, were adopted in 2017. As of the most recent assessment (2023), the lake was not meeting its Minimum Levels.

Figure D-332. Location of Eagle Lake (SW-N7) and Lake McLeod (SW-N8).

Figure D-333. Eagle Lake (SW-N7), March 2023.

Figure D-334. Eagle Lake (SW-N7), March 2023.

Figure D-335. Eagle Lake (SW-N7), March 2023.

Lake McLeod (SW-N8)

Lake McLeod is located southeast of Eagle Lake on the other side of U.S. Highway 17 (**Figure D-332**). This Ridge lake was assessed in March 2023 from the boat ramp at the north side of the lake off East Eagle Avenue and was determined to be Not Stressed (**Figures D-336, D-337, and D-338**). The lake levels were above normal.

Minimum Levels were originally established for Lake McLeod in 2007. They were re-evaluated for the lake, and revised levels, which include a Minimum Level of 128.3 ft. NGVD29 or 127.2 ft. NAVD88 and a High Minimum Level of 130.3 ft. NGVD29 or 129.2 NAVD88, were adopted in 2017. As of the 2023 assessment, the lake was meeting its Minimum Levels.

Figure D-336. Lake McLeod (SW-N8), March 2023.

Figure D-337. Lake McLeod (SW-N8), March 2023.

Figure D-338. Lake McLeod (SW-N8), March 2023.

Lake Walker (SW-QL)

Lake Walker is a Ridge lake in Polk County that is about 43 acres in size. The August 2023 assessment was conducted along the western shoreline adjacent to Walker Lake Road **(Figure D-339**). While most of the surrounding lands are agricultural, there are residences along the northern, eastern, and southern shorelines. This lake was determined to be Stressed in the analyses conducted in support of both the 2015 and 2020 CFWI RWSPs. However, normal water levels were observed during the August 2023 assessment, and it was determined to be Not Stressed (**Figures D-340, D-341, and D-342**).

Figure D-339. Location of Lake Walker (SW-QL). Red circle indicates the location of the 2023 stress assessment.

Figure D-340. Lake Walker (SW-QL), August 2023**.**

Figure D-341. Lake Walker (SW-QL), August 2023.

Figure D-342. Lake Walker (SW-QL), August 2023.

While Lake Walker was included in the Class 1 wetlands dataset for the analyses conducted in support of both the 2015 and 2020 CFWI RWSPs, it was moved from the Class 1 wetlands dataset to the Class 2 wetlands dataset for the analyses conducted in support of the 2025 CFWI RWSP. Analyses of water level data for the selected period of record indicated that the data were anomalous and not representative of groundwater-dominated wetlands within the CFWI Planning Area since both stressed and unstressed periods were included.

Lake Wales Ridge State Forest (SW-RR)

This Ridge wetland is located in the Walk-in-the-Water Tract of Lake Wales Ridge State Forest, which is about 2 miles east of Frostproof, just to the east of Lake Wales Ridge State Forest Walk in the Water 1 (DMIT-65) (**Figure D-343**). The site is accessible via the entrance off of Highway 630 E, and a 4x4 vehicle with good tires is required to traverse the deep sugar sand roads. This high-quality marsh was visited in 2017 as part of the DMIT site selection process; however, because there is an old borrow pit in the southern portion of the marsh, it was not selected. Instead, the marsh just to the west was selected (DMIT-65) and was established as a DMIT long-term wetlands monitoring site in 2022. This marsh was assessed in April 2022 and was determined to be Not Stressed. Unfortunately, no photographs were taken during the 2022 assessment.

Figure D-343. Location of Lake Wales Ridge State Forest (SW-RR).

Trout Lake (SW-UU)

This isolated marsh north of Trout Lake is located in the Avon Park area. This Ridge wetland was assessed in August 2023 along Pittsburg Road **(Figure D-344**). This marsh contained a high diversity of wetland vegetation and was determined to be Not Stressed (**Figures D-345, D-346, and D-347**).

Figure D-344. Location of Trout Lake (SW-UU).

Figure D-345. Trout Lake (SW-UU), August 2023.

Figure D-346. Trout Lake (SW-UU), August 2023.

Figure D-347. Trout Lake (SW-UU), August 2023.

Appendix E:

Class 2 Wetlands Assessment Results

Table E-1.

District	EM Working Group ID	Former CFCA/EMT ID	Site Name	Assessment Date	Lake or Wetland	Topographic Relief	Vegetation Zonation	Zones Present
SFWMD	DMIT-9		Camp Lonesome - Shallow Wet Prairie	5/10/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	DMIT-24		East Pine Island	2/12/2023	Wetland	Relatively Flat	Well Defined	T,D
SFWMD	DMIT-53		Lake Marion Creek East	6/28/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	DMIT-120		Snell West	2/15/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	DMIT-121	SF-ZJ3	Tibet Butler 1	4/12/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SFWMD	DMIT-130		Lake Marion Creek West	6/28/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	DMIT-132	SF-WA	NW of County Highway 580 - Snell Creek - Cypress	10/4/2023	Wetland	Moderate	Well Defined	T, D
SFWMD	DMIT-188	SF-VC	Camp Lonesome - South of Piss Pot	5/10/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-AC	SF-AC	N of Lake Weohyakapka , E of Lake Wales Ridge	11/8/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-AD	SF-AD	N of Lake Weohyakapka , E of Lake Wales Ridge	11/8/2023	Wetland	Relatively Flat	Well Defined	T, OD
SFWMD	SF-AF	SF-AF	Lake Ruby	10/18/2023	Lake	Relatively Flat	Somewhat Defined	T, D
SFWMD	SF-AG	SF-AG	E of RIBS at Lake Marion Creek Drive and Hemlock	11/8/2023	Wetland	Extreme	Well Defined	T, OD
SFWMD	SF-AJ	SF-AJ	W of San Miguel (Off Marigold)	10/25/2023	Wetland	Relatively Flat	Well Defined	T, OD
SFWMD	SF-AL	SF-AL	Along CR 535	10/25/2023	Wetland	Moderate	Somewhat Defined	T, OD
SFWMD	SF-AN	SF-AN	Off Mor Tay Road	9/13/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-AS	SF-AS	End of Cypress Road Across Golf Green	8/9/2023	Wetland	Relatively Flat	Poorly Defined	OD
SFWMD	SF-AT	SF-AT	N of Black Lake Road	8/23/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-AU	SF-AU	Providence, SE of US 17/US 92	9/22/2023	Wetland	Relatively Flat	Somewhat Defined	T, D
SFWMD	SF-AV1	SF-AV1	American Equities, SE of US 17/US 92	9/22/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-BG	SF-BG	SE of Lake Butler	10/25/2023	Wetland	Relatively Flat	Somewhat Defined	T
SFWMD	SF-BI	SF-BI	E of SR 535, S of Reaves Road	10/25/2023	Wetland	Moderate	Somewhat Defined	T, OD, D
SFWMD	SF-BM1	SF-BM1	Big Bend Swamp	10/11/2023	Wetland	Relatively Flat	Somewhat Defined	T

SFWMD	SF-BM2	SF-BM2	Jug Creek Swamp	10/11/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-BM3	SF-BM3	Big Bend Swamp	10/11/2023	Wetland	Relatively Flat	Somewhat Defined	OD, D
SFWMD	SF-BR	SF-BR	Off Lost Cove Road, W of Apopka Vineland Road	10/18/2023	Wetland	Relatively Flat	Somewhat Defined	T, D
SFWMD	SF-BS	SF-BS	E of Conroy, S of Millenia	1/11/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-BU	SF-BU	Lake Catherine Swamp	1/11/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SFWMD	SF-BV	SF-BV	Americana at Whitcomb	1/11/2023	Wetland	Extreme	Poorly Defined	OD, D
SFWMD	SF-BW	SF-BW	W Side of US 17/US 92, N of Americana	9/14/2022	Wetland	Extreme	Somewhat Defined	T
SFWMD	SF-BY	SF-BY	Lake Fran Conservation Easement off MetroWest Road	11/16/2022	Lake	Moderate	Poorly Defined	D
SFWMD	SF-BZ	SF-BZ	E of SR 435, N of McLeod	11/16/2023	Wetland	Relatively Flat	Somewhat Defined	T
SFWMD	SF-CE	SF-CE	South Park Circle	1/11/2023	Wetland	Relatively Flat	omewhat Define	T, OD, D
SFWMD	SF-CG	SF-CG	Between Lake Tohopekaliga and Alligator Lake	10/11/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-CJ	SF-CJ	N of Clay Whaley, W of FL Turnpike	10/11/2023	Wetland	Relatively Flat	Well Defined	T, DZ
SFWMD	SF-CL	SF-CL	NE of Lake Center	10/11/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-CP	SF-CP	Kissimmee, S of Mills Slough Road and W of FL Turnpike	10/11/2023	Wetland	Relatively Flat	Somewhat Defined	T, D
SFWMD	SF-CQ1	SF-CQ1	Kissimmee, E of Simpson Road and N of New Beginning	10/11/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-CT	SF-CT	E of Wetherbee, S of Palm Bay	9/14/2022	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-CY	SF-CY	Three Lakes WMA Site III	3/8/2023	Wetland	Relatively Flat	Well Defined	T
SFWMD	SF-CZ	SF-CZ	Three Lakes WMA Isolated Wetland Prairie	3/8/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-DB	SF-DB	Lake Gifford	7/26/2023	Lake	Relatively Flat	Somewhat Defined	OD, D
SFWMD	SF-DC	SF-DC	Lake Marion	11/8/2023	Lake	Moderate	Somewhat Defined	T, D
SFWMD	SF-DF	SF-DF	Along Lake Hancock Road at Porter Road	7/12/2023	Wetland	Moderate	Well Defined	T, OD, D

SFWMD	SF-DG	SF-DG	Near Site 10D	7/12/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-DI	SF-DI	Along Consulate Road W of FL Turnpike	1/11/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-DJ	SF-DJ	Lake Ellenore	9/14/2022	Lake	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-DM	SF-DM	Palm Lake - Lake Littoral Marsh	10/18/2023	Lake	Relatively Flat	Somewhat Defined	D
SFWMD	SF-DO	SF-DO	SE of US 192 Near Intersection with CR 545	7/26/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-DX	SF-DX	Off CR 535 S of US17/US92	10/25/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-EE	SF-EE	Celebration	9/13/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-EF	SF-EF	Reedy Creek	9/13/2023	Wetland	Extreme	Somewhat Defined	OD, D
SFWMD	SF-EQ	SF-EQ	Hilton Resort, Off Foxfire Circle	10/10/2023	Wetland	Relatively Flat	Somewhat Defined	OD, D
SFWMD	SF-ET	SF-ET	International Drive S, W of Continental Gateway	2/8/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-EW	SF-EW	N Off Osceola Polk Line Road	9/6/2023	Wetland	Moderate	Well Defined	T, OD
SFWMD	SF-FA	SF-FA	DeLuca Preserve	11/8/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-FD	SF-FD	DeLuca Preserve	11/8/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-VA	SF-VA	Between Mann and Tiny Roads on Lake Wales Ridge	3/22/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-VB	SF-VB	Between Mann and Tiny Roads on Lake Wales Ridge	3/22/2023	Lake	Moderate	Somewhat Defined	T, D
SFWMD	SF-VD	SF-VD	Camp Lonesome	5/10/2023	Wetland	Relatively Flat	Well Defined	T
SFWMD	SF-WB	SF-WB	Snell Creek - Wet Prairie	10/4/2023	Wetland	Moderate	Well Defined	T, D
SFWMD	SF-WD	SF-WD	N of Sinclair Just W of Old Lake Wilson Road	9/13/2023	Wetland	Extreme	Somewhat Defined	D
SFWMD	SF-WF	SF-WF	N of US 192 Curve at Black Lake Road	8/23/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-WG	SF-WG	E of SR 545, S Side of Siedel Road	7/12/2023	Wetland	Extreme	Somewhat Defined	D
SFWMD	SF-WH	SF-WH	E of SR 545 Off Lake Hancock Road	7/12/2023	Wetland	Extreme	Poorly Defined	D
SFWMD	SF-WJ	SF-WJ	Along Rheams Road, S of SR 535	4/12/2023	Wetland	Moderate	Somewhat Defined	T, D

SFWMD	SF-WK	SF-WK	Along SR 535, E of Rheams Road	4/12/2023	Wetland	Moderate	Somewhat Defined	T, D
SFWMD	SF-WL	SF-WL	W of Powerlines, Between Rheams and Overstreet	10/18/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-WM	SF-WM	Off Rheams Road Near Disney World Employee Entrance	4/12/2023	Wetland	Moderate	Somewhat Defined	OD, D
SFWMD	SF-WN	SF-WN	Lake Sharpe	10/18/2023	Wetland	Moderate	Somewhat Defined	T, D
SFWMD	SF-WT	SF-WT	Split Oak Forest Mitigation Park Cypress Head	5/25/2022	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-WU	SF-WU	Split Oak Forest Mitigation Park Cypress Head	5/25/2022	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-WV	SF-WV	Split Oak Forest Mitigation Park Cypress Head	5/25/2022	Wetland	Relatively Flat	Somewhat Defined	T, D
SFWMD	SF-WW	SF-WW	Off SR 527A	9/14/2022	Wetland	Moderate	Poorly Defined	OD, D
SFWMD	SF-WX	SF-WX	Off SR 527A	9/14/2022	Wetland	Moderate	Poorly Defined	OD, D
SFWMD	SF-WY	SF-WY	Off SR 527A	10/11/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-WZ	SF-WZ	Off SR 527A	10/11/2023	Wetland	Moderate	Somewhat Defined	OD, D
SFWMD	SF-XA	SF-XA	Near Intersection of Marigold and Bourne	10/25/2023	Wetland	Relatively Flat	Poorly Defined	OD
SFWMD	SF-XB1	SF-XB1	Lake Speer	3/22/2023	Lake	Relatively Flat	Somewhat Defined	OD, D
SFWMD	SF-XB2	SF-XB2	W of Lake Speer at Base of Lake Wales Ridge	3/22/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-XC	SF-XC	Behind Ramada at US 192 and Poinciana Boulevard	4/19/2023	Wetland	Moderate	Somewhat Defined	OD, D
SFWMD	SF-XD	SF-XD	Along International Drive W of Gateway Point Drive	2/8/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-XE	SF-XE	E of Lake Tohopekaliga, Near Hawkin Drive	10/25/2023	Wetland	Relatively Flat	Somewhat Defined	T
SFWMD	SF-XF	SF-XF	Grass Lake	7/26/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-XG	SF-XG	Hickorynut Lake	7/12/2023	Lake	Moderate	Well Defined	T, OD, D
SFWMD	SF-XH	SF-XH	Reedy Creek	11/9/2023	Wetland	Relatively Flat	Poorly Defined	T, D

SFWMD	SF-XI	SF-XI	Off CR 531 Near Bellalago	10/25/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-XJ	SF-XJ	Lake Reedy Floodplain	7/12/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SFWMD	SF-XL	SF-XL	SE of Lake Bryan	2/8/2023	Wetland	Moderate	Somewhat Defined	T, OD, D
SFWMD	SF-XM	SF-XM	Off Reedy Creek Road, W of Treatment Plant	9/6/2023	Wetland	Relatively Flat	Somewhat Defined	T
SFWMD	SF-XN	SF-XN	Near Solivita Road, S of County Highway 580	10/25/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-XO	SF-XO	Near Solivita Road, S of County Highway 580	10/25/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SFWMD	SF-XP	SF-XP	E of Shingle Creek Floodplain	4/19/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SFWMD	SF-XQ	SF-XQ	S of US 17/US 92 and W of CR 535	10/25/2023	Wetland	Moderate	Poorly Defined	OD, D
SFWMD	SF-XR	SF-XR	W of CR 531	10/23/2023	Wetland	Moderate	Well Defined	OD, D
SFWMD	SF-XS	SF-XS	Providence Development	9/22/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-XT	SF-XT	US 17/US 92 at Kinney Harmon	2/22/2023	Wetland	Moderate	Well Defined	T
SFWMD	SF-XU	SF-XU	Disney Wilderness Preserve/Walker Ranch	11/1/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-XV	SF-XV	Disney Wilderness Preserve/Walker Ranch	11/1/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-XW	SF-XW	Disney Wilderness Preserve/Walker Ranch	11/1/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-XY	SF-XY	Walker Ranch - WR8	11/1/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-YA	SF-YA	Lake Russell	11/1/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-YB	SF-YB	Tri County Road	9/6/2023	Lake	Moderate	Somewhat Defined	T, OD, D
SFWMD	SF-YC	SF-YC	Near Goodman Road	9/6/2023	Wetland	Relatively Flat	Well Defined	OD
SFWMD	SF-YD	SF-YD	Apache Trail	9/6/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-YE	SF-YE	E of Old Lake Wilson Road Near Reedy Creek Floodplain	9/13/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-YF	SF-YF	Reedy Creek Floodplain E of Old Lake Wilson Road	9/13/2023	Wetland	Moderate	Somewhat Defined	T
SFWMD	SF-YG	SF-YG	West of Narcoossee Road	5/25/2022	Wetland	Moderate	Well Defined	T, D

SFWMD	SF-YH	SF-YH	West of Narcoossee Road	5/25/2022	Wetland	Moderate	Somewhat Defined	T, D
SFWMD	SF-YI	SF-YI	N of Dowden Road	2/22/2023	Wetland	Moderate	Somewhat Defined	OD, D
SFWMD	SF-YN	SF-YN	Shadow Bay Park	10/18/2023	Lake	Moderate	Well Defined	T, D
SFWMD	SF-ZA1	SF-ZA1	Davenport Creek Swamp	8/23/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-ZA2	SF-ZA2	Davenport Creek Swamp Well OSF-102 OSF-103	8/23/2023	Wetland	Relatively Flat	Somewhat Defined	T
SFWMD	SF-ZA3	SF-ZA3	Goodman Road	8/23/2023	Wetland	Relatively Flat	Poorly Defined	T, OD
SFWMD	SF-ZB1	SF-ZB1	Near Boggy Creek Road	10/11/2023	Wetland	Relatively Flat	Poorly Defined	T, OD, D
SFWMD	SF-ZB2	SF-ZB2	E of FL Turnpike Off Florida Road	10/11/2023	Wetland	Relatively Flat	Somewhat Defined	T
SFWMD	SF-ZC1	SF-ZC1	W of John Young at 417 Interchange	2/8/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-ZC2	SF-ZC2	Shingle Creek E of Sandy Hill Road	2/8/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-ZC3	SF-ZC3	Shingle Creek Floodplain	4/19/2023	Wetland	Relatively Flat	Well Defined	T, OD
SFWMD	SF-ZC4	SF-ZC4	"Give The Kids The World" Boardwalk	10/11/2023	Wetland	Relatively Flat	Poorly Defined	T,OD
SFWMD	SF-ZC5	SF-ZC5	Shingle Creek Floodplain	4/19/2023	Wetland	Moderate	Poorly Defined	T
SFWMD	SF-ZC6	SF-ZC6	Between Kings Point Road and FL Turnpike	1/11/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-ZC7	SF-ZC7	E of International Drive S, N of World Center Drive	2/8/2023	Wetland	Relatively Flat	Well Defined	T
SFWMD	SF-ZC8	SF-ZC8	East Pine Island - STOPR Site	2/8/2023	Wetland	Relatively Flat	Well Defined	T, OD
SFWMD	SF-ZD1	SF-ZD1	Cypress Creek S of Lake Sheen	10/18/2023	Wetland	Relatively Flat	Poorly Defined	OD
SFWMD	SF-ZD2	SF-ZD2	E of SR 535, 0.5 Mile N of S Apopka Vineland Road	10/18/2023	Wetland	Relatively Flat	Somewhat Defined	T, D
SFWMD	SF-ZE1	SF-ZE1	Lake Britt	7/26/2023	Wetland	Extreme	Well Defined	OD, D
SFWMD	SF-ZE2	SF-ZE2	Lake Britt	8/9/2023	Lake	Extreme	Somewhat Defined	OD, D
SFWMD	SF-ZE3	SF-ZE3	Western Way W Off 429 Through Pine Plantation	8/9/2023	Wetland	Relatively Flat	Well Defined	T, OD

SFWMD	SF-ZF1	SF-ZF1	Reedy Creek Floodplain E of Reedy Creek Road	9/13/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-ZF2	SF-ZF2	Reedy Creek Floodplain E of Old Lake Wilson Road	9/13/2023	Wetland	Extreme	Well Defined	T, OD, D
SFWMD	SF-ZF3	SF-ZF3	Reedy Creek Floodplain, Western Way in RCID	10/25/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-ZG1	SF-ZG1	Between CR 527 and FL Turnpike Near Ball Fields	2/22/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SFWMD	SF-ZG2	SF-ZG2	Along Balcombe Road N of 417	2/22/2023	Wetland	Moderate	Somewhat Defined	T, D
SFWMD	SF-ZH1	SF-ZH1	Disney Wilderness Preserve/Walker Ranch	11/1/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-ZH2	SF-ZH2	Disney Wilderness Preserve/Walker Ranch	11/1/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-ZI1	SF-ZI1	Mystic Dunes Development, S of Fantasy Heights	9/13/2023	Wetland	Moderate	Poorly Defined	OD
SFWMD	SF-ZI2	SF-ZI2	Mystic Dunes Development, S of Fantasy Heights	9/6/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SFWMD	SF-ZJ5	SF-ZJ5	Lake Sheen	10/18/2023	Lake	Moderate	Well Defined	D
SFWMD	SF-ZJ6	SF-ZJ6	Lake Sheen	10/18/2023	Wetland	Relatively Flat	Poorly Defined	T, OD, D
SFWMD	SF-ZJ7	SF-ZJ7	E of SR 535, S of Lake Butler Road	10/25/2023	Wetland	Moderate	Somewhat Defined	T, D
SFWMD	SF-ZJ8	SF-ZJ8	Tibet Butler Preserve - North	4/12/2023	Wetland	Relatively Flat	Somewhat Defined	D
SFWMD	SF-ZK1	SF-ZK1	Little Sand Lake	10/18/2023	Lake	Moderate	Somewhat Defined	D
SFWMD	SF-ZK2	SF-ZK2	Spring Lake	10/18/2023	Lake	Moderate	Well Defined	T, D
SFWMD	SF-ZL1	SF-ZL1	Three Lakes WMA Wet Prairie	3/8/2023	Wetland	Relatively Flat	Somewhat Defined	T
SFWMD	SF-ZL2	SF-ZL2	Three Lakes WMA Cypress Dome	3/8/2023	Wetland	Relatively Flat	Well Defined	T, D
SFWMD	SF-ZN	SF-ZN	Adjacent to FL Turnpike (in Edgewater East)	10/11/2023	Wetland	Relatively Flat	Somewhat defined	T
SFWMD	SF-ZW	SF-ZW	County Park S of Conroy Road	10/18/2023	Lake	Relatively Flat	Well Defined	T, D
SFWMD	SF-ZX	SF-ZX	Shadow Bay	10/18/2023	Lake	Relatively Flat	Well Defined	T, D

SFWMD	SF-ZY	SF-ZY	NW of Lake Speer at Base of Lake Wales Ridge	3/22/2023	Wetland	Moderate	Well Defined	T, OD, D
SFWMD	SF-ZZ	SF-ZZ	Lake Hartley	3/22/2023	Lake	Extreme	Poorly Defined	D
SJRWMD	DMIT-4	SJ-0144	LBESF Site 2 (South)	7/21/2022	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SJRWMD	DMIT-5	SJ-0143	LBESF Site 1 (North)	7/20/2022	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SJRWMD	DMIT-6	SJ-0045	Bull Creek WMA North	6/29/2021	Wetland	Relatively Flat	Well Defined	T, OD
SJRWMD	DMIT-7	SJ-JI and SJ-0046	Bull Creek WMA South	6/29/2021	Wetland	Moderate	Well Defined	T, OD
SJRWMD	DMIT-21	SJ-HO and SJ-0076	Dixie Lake	6/8/2022	Lake	Extreme	Well Defined	T, OD, D
SJRWMD	DMIT-50	SJ-JB and SJ-0077	Lake Louisa Small Isolated	6/8/2022	Wetland	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	DMIT-55	SJ-0069	Prevatt Lake	4/21/2022	Lake	Extreme	Well Defined	T, OD, D
SJRWMD	DMIT-56	SJ-0011	Lake Proctor	1/20/2021	Lake	Relatively Flat	Somewhat Defined	T, OD, D
SJRWMD	DMIT-58	SJ-IB and SJ-008	Sunset Lake	1/14/2021	Lake	Relatively Flat	Somewhat Defined	T, OD, D
SJRWMD	DMIT-86	SJ-GA	Prairie Lake	6/15/2021	Lake	Moderate	Well Defined	T, O, D
SJRWMD	DMIT-90	SJ-FB4 and SJ-0132	RSRSR DMIT Site SJ-FB4	9/9/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	DMIT-91	SJ-0133	RSRSR DMIT Site 1	9/9/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	DMIT-92	SJ-0130	RSRSR DMIT Site 2	9/9/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	DMIT-99	SJ-FM and SJ-0007	Round Lake	1/13/2021	Lake	Extreme	Somewhat Defined	T, OD, D
SJRWMD	DMIT-113	SJ-0078	Lake Bartho	6/15/2022	Lake	Relatively Flat	Somewhat Defined	T
SJRWMD	DMIT-114	SJ-0080	Lake Jesup Isolated	8/24/2022	Wetland	Relatively Flat	Well Defined	T, D
SJRWMD	DMIT-133	SJ-0147	Hal Scott RP Site 1	6/18/2020	Wetland	Relatively Flat	Well Defined	T, OD
SJRWMD	DMIT-162	SJ-0145	Lake Apopka Marsh FW Site 1	6/25/2019	Wetland	Moderate	Somewhat Defined	T, OD
SJRWMD	DMIT-163	SJ-0146	Lake Apopka Marsh FW Site 2	6/26/2019	Wetland	Moderate	Somewhat Defined	T, OD
SJRWMD	DMIT-168	SJ-0042	Rock Springs Run State Reserve Site 3	7/21/2021	Wetland	Relatively Flat	Well Defined	T, OD, D
SJRWMD	DMIT-169	SJ-0043	Rock Springs Run State Reserve Site 4	7/21/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	DMIT-174	SJ-0075	Wekiva River State Park Site 1	5/19/2022	Wetland	Relatively Flat	Well Defined	T, OD, D
SJRWMD	DMIT-175	SJ-0079	Wekiva River State Park Site 2	6/16/2022	Wetland	Moderate	Somewhat Defined	T
SJRWMD	DMIT-177	SJ-0150	Hal Scott Preserve and RP Site 2	5/31/2023	Wetland	Relatively Flat	Somewhat Defined	T
SJRWMD	DMIT-180	SJ-0015	Geneva Wilderness Area	2/24/2021	Wetland	Relatively Flat	Somewhat Defined	T
SJRWMD	DMIT-181	SJ-0040	Black Hammock Site 1	6/23/2021	Wetland	Relatively Flat	Somewhat Defined	T

SJRWMD	DMIT-182	SJ-0041	Black Hammock Site 2	6/24/2021	Lake	Moderate	Somewhat Defined	T, OD
SJRWMD	DMIT-195	SJ-0148	Hal Scott RP Site 2	6/22/2020	Wetland	Relatively Flat	Well Defined	T, OD
SJRWMD	DMIT-196	SJ-0149	Hal Scott RP Site 3	7/3/2020	Wetland	Moderate	Well Defined	T, OD, D
SJRWMD	DMIT-197	SJ-0107	Hilochee WMA Site 1	5/17/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	DMIT-204	SJ-0101	Hilochee Site 3	5/3/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	DMIT-205	SJ-0106	Hilochee WMA Site 4	5/10/2023	Wetland	Extreme	Somewhat Defined	T, OD, D
SJRWMD	SJ-0001		Long Branch Preserve-Monitoring Well Site	12/11/2020	Wetland	Relatively Flat	Somewhat Defined	T
SJRWMD	SJ-0002		Long Branch Preserve-Freshwater Marsh	12/11/2020	Wetland	Relatively Flat	Well Defined	T
SJRWMD	SJ-0003		Long Branch Preserve-Pond	12/11/2020	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0004	SJ-DN	Wetland to the N of Boca Woods Drive	12/11/2020	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SJRWMD	SJ-0005	SJ-DO	UCF - Wetland E of Lake Claire	12/11/2020	Wetland	Moderate	Well Defined	T, OD
SJRWMD	SJ-0006	SJ-DQ	Lake Rouse	12/11/2020	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0009		Gallows Lake	1/14/2021	Lake	Moderate	Somewhat Defined	T, OD, D
SJRWMD	SJ-0010		Still Lake	1/20/2021	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0011	SJ-DT	W of Creel Street	6/29/2023	Wetland	Relatively Flat	Well Defined	T
SJRWMD	SJ-0018	SJ-DV	Along Econlockhatchee Road, N of Powerlines	4/2/2021	Wetland	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	SJ-0019	SJ-DX	E of SR 551, S of Quail Pond Road	4/2/2021	Wetland	Relatively Flat	Poorly Defined	T
SJRWMD	SJ-0021	SJ-DY	N of Hoffner, W of Semoran Boulevard	4/2/2021	Wetland	Relatively Flat	Poorly Defined	T
SJRWMD	SJ-0023	SJ-HI1	Jack's Lake	4/7/2021	Lake	Moderate	Somewhat Defined	T, OD, D
SJRWMD	SJ-0024	SJ-HL	Lake Felter	4/8/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0028		Clear Lake	6/8/2021	Lake	Moderate	Somewhat Defined	T, OD, D
SJRWMD	SJ-0029		Quail Pond	6/8/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0030		Lake Hodge	6/8/2021	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0032		Lake Marion	6/8/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0033		Little Lake Georgia	6/15/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0034		Lake Spier	6/15/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0035		Lake Berry	6/15/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0038		Lake Florence	6/15/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0048	SJ-ER	Lake Herrick	10/19/2021	Lake	Extreme	Poorly Defined	T
SJRWMD	SJ-0049	SJ-GC	Lake Lily	10/19/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0050	SJ-GB	Spring Lake	10/19/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0051	SJ-ET1	Lake Lucy	10/19/2021	Lake	Moderate	Somewhat Defined	T, OD, D

SJRWMD	SJ-0052	SJ-EU	Crooked Lake	10/19/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0053	SJ-KD	Lake Bream	10/19/2021	Lake	Relatively Flat	Somewhat Defined	T
SJRWMD	SJ-0055	SJ-CS1	Wetland N of Jamestown Boulevard Across From Town Way	10/29/2021	Wetland	Moderate	Somewhat Defined	T, OD
SJRWMD	SJ-0057	SJ-CX	Pearl Lake	10/29/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0058	SJ-CY	Mirror Lake	10/29/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0059	SJ-CZ	Pond S of SR 436/Semoran Boulevard at Executive Park Court	10/29/2021	Wetland	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0060	SJ-EY	Lake Jackson	10/29/2021	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0061	SJ-EZ	Lake McCoy	1/21/2022	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0062	SJ-FV	Buchan Pond	1/21/2022	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0063	SJ-FS	Wolf Lake	1/21/2022	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0064	SJ-FR	Lake Grassmere	1/21/2022	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0065	SJ-FT	Lake Wilkins	1/21/2022	Wetland	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0066	SJ-FU	Lake Standish	1/21/2022	Lake	Moderate	Somewhat Defined	T, OD, D
SJRWMD	SJ-0067	SJ-FW	Heineger Lake	1/21/2022	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0068	SJ-FY	Marshall Lake	1/21/2022	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0071	SJ-EC	Lake Jean	5/12/2022	Lake	Moderate	Well Defined	T, OD
SJRWMD	SJ-0072	SJ-EE	Lake Susannah	5/12/2022	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0083		Secret Lake	1/26/2023	Lake	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	SJ-0084	SJ-AR	Red Bug Lake Road at Dovera	1/26/2023	Wetland	Moderate	Somewhat Defined	T
SJRWMD	SJ-0085	SJ-EN	Lake Lucien	2/2/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0086	SJ-EO	Lake Eve	2/2/2023	Lake	Moderate	Somewhat Defined	T, OD
SJRWMD	SJ-0087		Lake Betty	2/2/2023	Lake	Relatively Flat	Somewhat Defined	T, OD, D
SJRWMD	SJ-0088		Blue Lake	2/2/2023	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0089	SJ-AD	S of Osprey Lakes Drive	2/9/2023	Wetland	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0090		S of 419 East of Twin Rivers	2/9/2023	Wetland	Relatively Flat	Somewhat Defined	T
SJRWMD	SJ-0091		S of 419 Publix Commercial Plaza	2/9/2023	Wetland	Relatively Flat	Somewhat Defined	T
SJRWMD	SJ-0092	SJ-AE	Lake Catherine	2/9/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0095	SJ-AV	Eagle Boulevard Near Dodd Road	2/14/2023	Wetland	Relatively Flat	Somewhat Defined	T
SJRWMD	SJ-0097		Marsh S of Lake Howell Lane	2/14/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	SJ-0098		Newberryport Avenue	2/21/2023	Wetland	Moderate	Somewhat Defined	T
SJRWMD	SJ-0099		Sunnytown Park	2/21/2023	Wetland	Relatively Flat	Somewhat Defined	T
SJRWMD	SJ-0100		Maitland Community Park	2/21/2023	Wetland	Relatively Flat	Somewhat Defined	T

SJRWMD	SJ-0103	SJ-GD	Lake Beulah	5/4/2023	Lake	Moderate	Well Defined	T, OD
SJRWMD	SJ-0104	SJ-GE	Lake Reaves	5/4/2023	Lake	Moderate	Somewhat Defined	T, OD
SJRWMD	SJ-0105	SJ-GF	Sunset Lakes of Windermere	5/4/2023	Lake	Extreme	Well Defined	T, OD, D
SJRWMD	SJ-0111	SJ-HB	Lake Montgomery	7/27/2023	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0112	SJ-HC	N of Wilson Lake Parkway	7/27/2023	Lake	Moderate	Somewhat Defined	T, OD, D
SJRWMD	SJ-0113	SJ-HD	Lake Merritt, Schoolhouse Lake	7/27/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0114	SJ-HF	Grassy Lake	7/27/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0115	SJ-HH	Plum Lake	7/27/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0116	SJ-HJ	Crystal Lake	7/27/2023	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0117	SJ-HX	N of CR 565A	7/27/2023	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0118	SJ-HK	Lost Lake	7/27/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0119	SJ-GN	Black Stills Lake	7/27/2023	Lake	Relatively Flat	Well Defined	T, OD, D
SJRWMD	SJ-0121		Econlockhatchee River Canoe Launch CR 419	8/16/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SJRWMD	SJ-0122		Econlockhatchee River Barr Street Trailhead	8/16/2023	Wetland	Moderate	Somewhat Defined	T, OD, D
SJRWMD	SJ-0123	SJ-KM	Wetland 13T, Cocoa Wellfield	8/17/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	SJ-0124	SJ-KL	Wetland East of Well 12T, Cocoa Wellfield	8/17/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD
SJRWMD	SJ-0125	SJ-KK	Wetland 12T1, Cocoa Wellfield	8/17/2023	Wetland	Relatively Flat	Well Defined	T, OD
SJRWMD	SJ-0128	SJ-KI	Wetland 5T, Cocoa Wellfield	8/17/2023	Wetland	Relatively Flat	Poorly Defined	T
SJRWMD	SJ-0137	SJ-HR	Twin Oaks MHP	9/20/2023	Lake	Extreme	Well Defined	T, OD, D
SJRWMD	SJ-0138	SJ-JC	N Side of CR 561	9/20/2023	Wetland	Moderate	Somewhat Defined	T, OD
SJRWMD	SJ-0141	SJ-KC	Hartwood Marsh Road Powerline	9/20/2023	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0142	SJ-HM2	Flat Lake North	9/20/2023	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-0152	SJ-DR	E of Windsorgate Road, W of Northampton Road	11/8/2023	Wetland	Moderate	Somewhat Defined	T, O
SJRWMD	SJ-0154	SJ-ED	E of SR 436, W of Forsyth Road	11/8/2023	Wetland	Relatively Flat	Somewhat Defined	T, O
SJRWMD	SJ-0156	SJ-BT	Lake Seminary	11/8/2023	Lake	Relatively Flat	Well Defined	T, O, D
SJRWMD	SJ-0157	SJ-EX	Lake Pleasant	11/8/2023	Lake	Moderate	Well Defined	T, O, D
SJRWMD	SJ-0158	SJ-GG	Fern Bayhead	11/8/2023	Wetland	Relatively Flat	Somewhat Defined	T, O, D

SJRWMD	SJ-0159	SJ-GQ	S of FL Turnpike, N of SR 50	11/8/2023	Lake	Moderate	Well Defined	T, O, D
SJRWMD	SJ-0160	SJ-GM	Doll Lake	11/8/2023	Lake	Relatively Flat	Well Defined	T, O, D
SJRWMD	SJ-0161	SJ-KH2	Lake Glen	11/14/2023	Lake	Moderate	Well Defined	T,O,D
SJRWMD	SJ-0162	SJ-KF	Lake Emma	11/14/2023	Lake	Moderate	Well Defined	T, O, D
SJRWMD	SJ-0163	SJ-CN	S of SR 46, W of Lake Markham	11/14/2023	Lake	Relatively Flat	Well Defined	T, O, D
SJRWMD	SJ-0164	SJ-FL	N of Boch Road, W of Plymouth Sorrento Road	11/14/2023	Lake	Relatively Flat	Well Defined	T, O, D
SJRWMD	SJ-0165	SJ-KA	Round Lake Road N	11/28/2023	Lake	Moderate	Somewhat Defined	T, O, D
SJRWMD	SJ-0166	SJ-KB	Round Lake Road S	11/28/2023	Lake	Moderate	Somewhat Defined	T, O, D
SJRWMD	SJ-0167	SJ-FQ	Lake Maggiore	11/28/2023	Lake	Moderate	Well Defined	T, O, D
SJRWMD	SJ-0168	SJ-GI	Montverde-Ridgewood Avenue Near Bay Avenue	11/28/2023	Wetland	Moderate	Well Defined	T, O, D
SJRWMD	SJ-0169	SJ-QC	Trout Lake	11/28/2023	Lake	Extreme	Somewhat Defined	T, O, D
SJRWMD	SJ-0170	SJ-QA	Church Lake	11/28/2023	Lake	Relatively Flat	Well Defined	T, O, D
SJRWMD	SJ-AJ	SJ-AJ	Lake Gem	6/8/2021	Lake	Moderate	Well Defined	T, OD, D
SJRWMD	SJ-LH	SJ-LH	Island Lake	6/8/2021	Lake	Relatively Flat	Well Defined	T, O, D
SWFWMD	DMIT-2		Alston New Cypress	4/6/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-43		Lake Annie (Polk)	11/16/2022	Lake	Extreme	Somewhat Defined	T, OD, D
SWFWMD	DMIT-47		Lake Easy	11/16/2022	Lake	Moderate	Well Defined	T, OD, D
SWFWMD	DMIT-63		Lake Wales Ridge State Forest Arbuckle 1	4/14/2022	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	DMIT-64		Lake Wales Ridge State Forest Arbuckle 2	4/14/2022	Wetland	Relatively Flat	Poorly Defined	T, OD
SWFWMD	DMIT-65		Lake Wales Ridge State Forest Walk in the Water 1	4/12/2022	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	DMIT-66		Lake Wales Ridge State Forest Walk in the Water 2	4/12/2022	Wetland	Extreme	Somewhat Defined	T, D
SWFWMD	DMIT-68		Lake Wales Ridge WEA #2	8/17/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SWFWMD	DMIT-102		Thornhill Ranch	4/19/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-134		Alafia River Reserve	4/25/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-135		Bonnet Lake Marsh	4/20/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-137		Crooked Lake West 1	8/24/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-138		Crooked Lake West 2	8/24/2023	Wetland	Relatively Flat	Poorly Defined	T
SWFWMD	DMIT-139		Crooked Lake WEA 1	4/15/2022	Wetland	Moderate	Somewhat Defined	T, OD, D

SWFWMD	DMIT-140		Crooked Lake WEA 2	4/15/2022	Wetland	Moderate	Somewhat Defined	T, OD, D
SWFWMD	DMIT-141	SW-C1	Gator Creek Reserve 1	4/18/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-142		Gator Creek Reserve 2	4/18/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-143		Green Swamp Upper Withlacoochee	1/24/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-144		Hampton Colt Creek	5/25/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-145		Hampton Gator Creek	5/25/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-146		Hilochee Osprey West	4/20/2023	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	DMIT-147		Lake Marie	11/16/2022	Lake	Extreme	Well Defined	T, OD, D
SWFWMD	DMIT-148		Lake Marion Creek Scrub	4/26/2023	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	DMIT-149		Lake Maude	9/22/2022	Lake	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-150		Lake Ned	11/16/2022	Lake	Moderate	Well Defined	T, OD, D
SWFWMD	DMIT-152		Richloam Upper Little Withlacoochee	2/21/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-153		Saddle Blanket Scrub 1	4/13/2022	Wetland	Moderate	Poorly Defined	T, OD
SWFWMD	DMIT-155		Saddle Blanket Scrub 3	4/13/2022	Lake	Moderate	Poorly Defined	T, OD, D
SWFWMD	DMIT-156		Pasture Reserve 1	2/21/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-157		Pasture Reserve 2	2/21/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-158		Pasture Reserve 3	2/21/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	DMIT-159		Tiger Creek 1	4/11/2022	Lake	Extreme	Somewhat Defined	T, D
SWFWMD	DMIT-160	SW-H1	Tiger Creek 2	4/11/2022	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	DMIT-199		Hickory Lake	7/13/2023	Lake	Moderate	Well Defined	T, OD, D
SWFWMD	Old DMIT-198		Bartow Airport	9/22/2022	Wetland	Moderate	Somewhat Defined	T, OD, D
SWFWMD	SW-AB	SW-AB	Near Tenoroc Transportation Facility	3/7/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	SW-AC	SW-AC	Near County Landfill	3/7/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	SW-AE	SW-AE	CRUSA T9	3/7/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	SW-AI	SW-AI	W of Lake Weohyakapka and Tiger Creek	8/17/2023	Wetland	Relatively Flat	Poorly Defined	T
SWFWMD	SW-AK	SW-AK	On Lake Wales Ridge SW of Lake Pierce	8/24/2023	Wetland	Moderate	Poorly Defined	OD, D
SWFWMD	SW-AL	SW-AL	On Lake Wales Ridge SW of Lake Pierce	8/24/2023	Wetland	Moderate	Somewhat Defined	T, OD, D
SWFWMD	SW-AN	SW-AN	N Lake Pierce	8/24/2023	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	SW-AO	SW-AO	E of US 17/US 92	8/24/2023	Wetland	Moderate	Somewhat Defined	T, OD, D

SWFWMD	SW-AQ	SW-AQ	Along Loughman Road (CR 54)	8/31/2023	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	SW-AR	SW-AR	S of I-4 Loughman Road Interchange	8/31/2023	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	SW-AS	SW-AS	Along Loughman Road	8/31/2023	Wetland	Moderate	Poorly Defined	T, D
SWFWMD	SW-AT3	SW-AT3	S of Loughman Road	8/31/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	SW-CC	SW-CC	Hilochee	8/24/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	SW-D1	SW-D1	Little Lake Dinner Wetland	3/7/2023	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SWFWMD	SW-EE	SW-EE	NERUSA - Pamplin Site	8/31/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	SW-F1	SW-F1	Dick's Bros. Wetland	8/24/2023	Wetland	Extreme	Well Defined	T, OD, D
SWFWMD	SW-FF	SW-FF	NERUSA - Loma Linda Well	8/31/2023	Wetland	Moderate	Poorly Defined	T, OD, D
SWFWMD	SW-GG	SW-GG	Standard Mine	8/31/2023	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	SW-H1A	SW-H1A	Tiger Creek Preserve - TNC	4/11/2022	Wetland	Extreme	Well Defined	T, OD, D
SWFWMD	SW-LE	SW-LE	Cypress Creek #199, W17 Sentry Wetland	7/28/2022	Wetland	Relatively Flat	Somewhat Defined	T, OD, D
SWFWMD	SW-LK	SW-LK	Green Swamp #5, #302	2/9/2023	Wetland	Relatively Flat	Well Defined	T, OD, D
SWFWMD	SW-N7	SW-N7	Eagle Lake	3/7/2023	Lake	Extreme	Poorly Defined	OD, D
SWFWMD	SW-N8	SW-N8	Lake McLeod	3/7/2023	Lake	Moderate	Poorly Defined	T, OD, D
SWFWMD	SW-QL	SW-QL	Lake Walker	8/10/2023	Lake	Extreme	Well Defined	T, OD, D
SWFWMD	SW-RR	SW-RR	Lake Wales Ridge State Forest	4/12/2022	Wetland	Moderate	Well Defined	T, OD, D
SWFWMD	SW-UU	SW-UU	Trout Lake	8/17/2023	Wetland	Moderate	Well Defined	T, OD, D

Table E-2.

District	EM Working Group ID	Former CFCA/EMT ID	Site Name	Soil Type at Wetland Boundary	Soil Subsidence/ Oxidation	Soil Fissures	Soil Compaction	List of Hydrologic Indicators
SFWMD	DMIT-9		Camp Lonesome - Shallow Wet Prairie	Sand/Mineral, Hydric	None	None	None	Saw Palmetto Edge
SFWMD	DMIT-24		East Pine Island	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge
SFWMD	DMIT-53		Lake Marion Creek East	Sand with High Organic Matter	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots
SFWMD	DMIT-120		Snell West	Muck	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Algal Mats
SFWMD	DMIT-121	SF-ZJ3	Tibet Butler 1	Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	DMIT-130		Lake Marion Creek West	Sand	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Algal Mats
SFWMD	DMIT-132	SF-WA	NW of County Highway 580 - Snell Creek - Cypress	Sand/Mineral, Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	DMIT-188	SF-VC	Camp Lonesome - South of Piss Pot	Sand/Mineral, Hydric, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Algal Mats, Rafted Debris
SFWMD	SF-AC	SF-AC	N of Lake Weohyakapka, E of Lake Wales Ridge	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots
SFWMD	SF-AD	SF-AD	N of Lake Weohyakapka, E of Lake Wales Ridge	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Saw Palmetto Horses, Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks
SFWMD	SF-AF	SF-AF	Lake Ruby	Sand/Mineral, Saturated	None	None	None	Algal Mats
SFWMD	SF-AG	SF-AG	E of RIBS at Lake Marion Creek Drive and Hemlock	Muck, Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Saw Palmetto Horses, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Water Marks
SFWMD	SF-AJ	SF-AJ	W of San Miguel (Off Marigold)	Sand/Mineral, Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Saw Palmetto Horses, Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-AL	SF-AL	Along CR 535	Muck, Hydric	None	None	None	None
SFWMD	SF-AN	SF-AN	Off Mor Tay Road	Sand/Mineral, Hydric	None	None	None	Pine Edge, Lichen Lines, Stain Lines, Water marks, Water Lines on Boardwalk
SFWMD	SF-AS	SF-AS	End of Cypress Road Across Golf Green	Muck, Hydric, Saturated	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-AT	SF-AT	N of Black Lake Road	Peat, Muck	None	None	None	Adventitious Roots
SFWMD	SF-AU	SF-AU	Providence, SE of US 17/US 92	Hydric, Moist	None	None	None	Saw Palmetto Edge, Stain Lines, Adventitious Roots (29" on Hypericum), Rafted Debris, Aquatic Plants

SFWMD	SF-AV1	SF-AV1	American Equities, SE of US 17/US 92	Muck, Saturated	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks
SFWMD	SF-BG	SF-BG	SE of Lake Butler	Muck, Hydric	None	None	None	Saw Palmetto Edge
SFWMD	SF-BI	SF-BI	E of SR 535, S of Reaves Road	Muck, Hydric	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots
SFWMD	SF-BM1	SF-BM1	Big Bend Swamp	Muck, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Saw Palmetto Horses, Lichen Lines, Moss Collars
SFWMD	SF-BM2	SF-BM2	Jug Creek Swamp	Muck, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks, Rafted Debris
SFWMD	SF-BM3	SF-BM3	Big Bend Swamp	Sand/Mineral, Hydric, Saturated	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks, Rafted Debris
SFWMD	SF-BR	SF-BR	Off Lost Cove Road, W of Apopka Vineland Road	Sand/Mineral, Muck, Hydric, Saturated	None	None	None	Lichen Lines, Enlarged Lenticels on Laurel Oak
SFWMD	SF-BS	SF-BS	E of Conroy, S of Millenia	Muck, Saturated	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-BU	SF-BU	Lake Catherine Swamp	Muck, Saturated	Yes	None	None	Lichen Lines, Stain Lines
SFWMD	SF-BV	SF-BV	Americana at Whitcomb	New Fill at Boundary	None	None	None	Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-BW	SF-BW	W Side of US 17/US 92, N of Americana	Muck, Dry	Yes	None	None	Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-BY	SF-BY	Lake Fran Conservation Easement off MetroWest Road	Muck, Inundated	Yes	None	None	Lichen Lines, Cypress Inflection Points
SFWMD	SF-BZ	SF-BZ	E of SR 435, N of McLeod	Muck, Saturated	Yes	None	None	Pine Edge, Moss Collars, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-CE	SF-CE	South Park Circle	Muck, Saturated	None	None	None	Pine Edge, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-CG	SF-CG	Between Lake Tohopekaliga and Alligator Lake	Sand/Mineral	None	None	None	Pine Edge, Saw Palmetto Edge, Saw Palmetto "Horses" on edge
SFWMD	SF-CJ	SF-CJ	N of Clay Whaley, W of FL Turnpike	Sand/Mineral	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots
SFWMD	SF-CL	SF-CL	NE of Lake Center	Muck, Dry	None	None	None	Pine Edge, Lichen Lines, Stain Lines, Adventitious Roots
SFWMD	SF-CP	SF-CP	Kissimmee, S of Mills Slough Road and W of FL Turnpike	Sand/Mineral, Hydric, Saturated	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks

SFWMD	SF-CQ1	SF-CQ1	Kissimmee, E of Simpson Road and N of New Beginning	Muck, Hydric, Moist	None	None	None	Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Water Marks
SFWMD	SF-CT	SF-CT	E of Wetherbee, S of Palm Bay	Muck, Inundated	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-CY	SF-CY	Three Lakes WMA Site III	Muck, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Adventitious Roots, Cypress Inflection Points, Algal Mats
SFWMD	SF-CZ	SF-CZ	Three Lakes WMA Isolated Wetland Prairie	Sand/Mineral	None	None	None	Saw Palmetto Edge, Adventitious Roots, Algal Mats
SFWMD	SF-DB	SF-DB	Lake Gifford	Sand/Mineral, Dry	None	None	None	Lichen Lines, Adventitious Roots
SFWMD	SF-DC	SF-DC	Lake Marion	No Soil Sample	None	None	None	Stain Lines, Adventitious Roots, Buttressed Tree Trunks
SFWMD	SF-DF	SF-DF	Along Lake Hancock Road at Porter Road	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-DG	SF-DG	Near Site 10D	Sand/Mineral, Muck, Moist	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks
SFWMD	SF-DI	SF-DI	Along Consulate Road W of FL Turnpike	Muck, Saturated	Yes	None	None	Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-DJ	SF-DJ	Lake Ellenore	Muck, Inundated	Yes	None	None	Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-DM	SF-DM	Palm Lake - Lake Littoral Marsh	Sand/Mineral, Muck, Inundated	None	None	None	Pine Edge, Rafted Debris
SFWMD	SF-DO	SF-DO	SE of US 192 Near Intersection with CR 545	Muck, Hydric	None	None	None	Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Rafted Debris
SFWMD	SF-DX	SF-DX	Off CR 535 S of US17/US92	Sand/Mineral, Hydric	None	None	None	Lichen Lines, Cypress Inflection Points
SFWMD	SF-EE	SF-EE	Celebration	Muck, Moist	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-EF	SF-EF	Reedy Creek	Sand/Mineral, Hydric	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Water marks
SFWMD	SF-EQ	SF-EQ	Hilton Resort, Off Foxfire Circle	Muck, Hydric, Saturated	None	None	None	Saw Palmetto Edge, Moss Collars, Lichen Lines, Water Marks
SFWMD	SF-ET	SF-ET	International Drive S, W of Continental Gateway	Muck, Inundated	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Expanded Lenticels
SFWMD	SF-EW	SF-EW	N Off Osceola Polk Line Road	Sand/Mineral, Hydric	None	None	None	Saw Palmetto Edge, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks
SFWMD	SF-FA	SF-FA	DeLuca Preserve	Sand/Mineral, Hydric, Moist	None	None	None	Saw Palmetto Edge, Adventitious Roots, Algal Mats
SFWMD	SF-FD	SF-FD	DeLuca Preserve	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Adventitious Roots

SFWMD	SF-VA	SF-VA	Between Mann and Tiny Roads on Lake Wales Ridge	Sand/Mineral, Dry	None	None	None	Stain Lines, Algal Mates, Water Marks, Rafted Debris
SFWMD	SF-VB	SF-VB	Between Mann and Tiny Roads on Lake Wales Ridge	Sand/Mineral, Hydric, Moist	None	None	None	Stain Lines, Adventitious Roots, Rafted Debris
SFWMD	SF-VD	SF-VD	Camp Lonesome	Sand/Mineral, Hydric, Moist	Yes	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-WB	SF-WB	Snell Creek - Wet Prairie	Sand/Mineral, Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Algal Mats, Buttressed Tree Trunks
SFWMD	SF-WD	SF-WD	N of Sinclair Just W of Old Lake Wilson Road	Sand/Mineral, Hydric	None	None	None	Stain Lines, Adventitious Roots
SFWMD	SF-WF	SF-WF	N of US 192 Curve at Black Lake Road	Sand/Mineral, Hydric	None	None	None	Lichen Lines, Adventitious Roots, Cypress Inflection Points
SFWMD	SF-WG	SF-WG	E of SR 545, S Side of Siedel Road	Inaccessible (Steep Slope)	Inaccessible (Steep Slope)	Inaccessible (Steep Slope)	Inaccessible (Steep Slope)	Inaccessible (Fenced Off)
SFWMD	SF-WH	SF-WH	E of SR 545 Off Lake Hancock Road	Sand/Mineral, Muck, Saturated	None	None	None	Lichen Lines
SFWMD	SF-WJ	SF-WJ	Along Rheams Road, S of SR 535	Muck, Hydric, Moist	None	None	None	Pine Edge, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-WK	SF-WK	Along SR 535, E of Rheams Road	Muck, Moist	None	None	None	Pine Edge, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats
SFWMD	SF-WL	SF-WL	W of Powerlines, Between Rheams and Overstreet	Sand/Mineral, Muck Mineral at Surface	None	None	None	Moss Collars, Adventitious Roots, Buttressed Tree Trunks, Stain Lines, Lichen Lines, Cypress Inflection Points, Pine Hummocks, Loop Roots
SFWMD	SF-WM	SF-WM	Off Rheams Road Near Disney World Employee Entrance	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-WN	SF-WN	Lake Sharpe	Muck	Yes	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Moss Collars
SFWMD	SF-WT	SF-WT	Split Oak Forest Mitigation Park Cypress Head	Muck	Yes	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks, Rafted Debris, Water Lines of Docks/Pilings
SFWMD	SF-WU	SF-WU	Split Oak Forest Mitigation Park Cypress Head	Muck, Hydric, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Algal Mats, Water Marks, Crayfish Burrows

SFWMD	SF-WV	SF-WV	Split Oak Forest Mitigation Park Cypress Head	Sand/Mineral, Muck, Hydric, Inundated	Yes	None	None	Pine Edge, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks
SFWMD	SF-WW	SF-WW	Off SR 527A	Muck, Inundated	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-WX	SF-WX	Off SR 527A	Muck	None	None	None	Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-WY	SF-WY	Off SR 527A	Sand/Mineral	Yes	none	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-WZ	SF-WZ	Off SR 527A	Muck	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points, Stain Lines
SFWMD	SF-XA	SF-XA	Near Intersection of Marigold and Bourne	Sand/Mineral	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-XB1	SF-XB1	Lake Speer	Muck, Saturated	None	None	None	Saw Palmetto Edge, Adventitious Roots, Algal Mats
SFWMD	SF-XB2	SF-XB2	W of Lake Speer at Base of Lake Wales Ridge	Muck, Saturated	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-XC	SF-XC	Behind Ramada at US 192 and Poinciana Boulevard	Muck, Saturated	None	None	None	Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-XD	SF-XD	Along International Drive W of Gateway Point Drive	Muck	Yes	None	None	Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-XE	SF-XE	E of Lake Tohopekaliga, Near Hawkin Drive	Muck, Hydric, Moist	None	None	None	Saw Palmetto Edge, Saw Palmetto Horses, Moss Collars, Lichen Lines, Adventitious
SFWMD	SF-XF	SF-XF	Grass Lake	Sand/Mineral, Peat, Hydric, Saturated	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-XG	SF-XG	Hickorynut Lake	Hydric, Sand/Mineral, Moist	None	None	None	Saw Palmetto Edge, Adventitious Roots
SFWMD	SF-XH	SF-XH	Reedy Creek	Sand/Mineral, Muck, Moist	None	None	None	Lichen Lines, Buttressed Tree Trunks
SFWMD	SF-XI	SF-XI	Off CR 531 Near Bellalago	Muck, Hydric	None	None	None	Moss Collars, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-XJ	SF-XJ	Lake Reedy Floodplain	Hydric, Sand/Mineral. Moist	None	None	None	None, Pine Hummock
SFWMD	SF-XL	SF-XL	SE of Lake Bryan	Muck, Inundated	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Loop Roots
SFWMD	SF-XM	SF-XM	Off Reedy Creek Road, W of Treatment Plant	Sand/Mineral, Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Water Marks

SFWMD	SF-XN	SF-XN	Near Solivita Road, S of County Highway 580	Sand/Mineral, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collar, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks
SFWMD	SF-XO	SF-XO	Near Solivita Road, S of County Highway 580	Hydric, Moist	None	None	None	Saw Palmetto Edge, Moss Collars, Buttressed Tree Trunks
SFWMD	SF-XP	SF-XP	E of Shingle Creek Floodplain	Muck, Saturated	None	None	None	Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-XQ	SF-XQ	S of US 17/US 92 and W of CR 535	Muck, Hydric, Moist	None	None	None	Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Rafted Debris
SFWMD	SF-XR	SF-XR	W of CR 531	Muck, Hydric, Moist	None	None	None	Moss Collars, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-XS	SF-XS	Providence Development	Muck, Saturated	None	None	None	Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks, Rafted Debris
SFWMD	SF-XT	SF-XT	US 17/US 92 at Kinney Harmon	Muck, Saturated	Yes	None	None	Saw Palmetto Edge, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Loops Roots
SFWMD	SF-XU	SF-XU	Disney Wilderness Preserve/Walker Ranch	Sand/Mineral, Hydric	None	None	None	Saw Palmetto Edge, Adventitious Roots, Algal Mats
SFWMD	SF-XV	SF-XV	Disney Wilderness Preserve/Walker Ranch	Sand/Mineral, Hydric	None	None	None	Saw Palmetto Edge, Adventitious Roots, Stain Lines
SFWMD	SF-XW	SF-XW	Disney Wilderness Preserve/Walker Ranch	Sand, Hydric Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Buttressed Tree Trunks, Adventitious Roots
SFWMD	SF-XY	SF-XY	Walker Ranch - WR8	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Infection Points, Algal Mats, Water Marks
SFWMD	SF-YA	SF-YA	Lake Russell	Sand/Mineral, Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Moss Collars, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks
SFWMD	SF-YB	SF-YB	Tri County Road	Sand/Mineral, Hydric	None	None	None	Saw Palmetto Edge, Adventitious Roots, Rafted Debris
SFWMD	SF-YC	SF-YC	Near Goodman Road	Sand/Mineral, Hydric	None	None	None	Moss Collars, Hummocked Trees
SFWMD	SF-YD	SF-YD	Apache Trail	Sand/Mineral, Inundated	None	None	None	Presence of Nuisance Exotics, Age Class Difference of Trees, Evidence of Recruitment of Tress Species
SFWMD	SF-YE	SF-YE	E of Old Lake Wilson Road Near Reedy Creek Floodplain	Sand/Mineral, Hydric, Saturated	None	None	None	Saw Palmetto Edge, Moss Collars, Lichen Lines, Adventitious Roots, Secondary Flow Channels, Buttressed Tree Trucks, Cypress Inflection Points

SFWMD	SF-YF	SF-YF	Reedy Creek Floodplain E of Old Lake Wilson Road	Sand/Mineral, Hydric, Saturated	None	None	None	None
SFWMD	SF-YG	SF-YG	West of Narcoossee Road	Muck, Hydric, Inundated	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks
SFWMD	SF-YH	SF-YH	West of Narcoossee Road	Muck, Inundated	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks
SFWMD	SF-YI	SF-YI	N of Dowden Road	Muck, Inundated	None	None	None	Moss Collars, Adventitious Roots, Buttressed Tree Trunks, Stain Lines, Lichen Lines, Cypress Inflection Points, Water Marks
SFWMD	SF-YN	SF-YN	Shadow Bay Park	Sand, Muck, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks, Rafted Debris, Lichen Lines, Stain Lines, Adventitious Roots (13")
SFWMD	SF-ZA1	SF-ZA1	Davenport Creek Swamp	Muck, Moist	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots, Water Marks
SFWMD	SF-ZA2	SF-ZA2	Davenport Creek Swamp Well OSF-102 OSF-103	Sand, Saturated	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Adventitious Roots
SFWMD	SF-ZA3	SF-ZA3	Goodman Road	Sand, Hydric Moist	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Adventitious Roots
SFWMD	SF-ZB1	SF-ZB1	Near Boggy Creek Road	Sand/Mineral, Moist	None	None	None	Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-ZB2	SF-ZB2	E of FL Turnpike Off Florida Road	Sand/Mineral, Moist	Yes	None	None	Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZC1	SF-ZC1	W of John Young at 417 Interchange	Muck, Inundated	None	Yes	Yes	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZC2	SF-ZC2	Shingle Creek E of Sandy Hill Road	Muck, Inundated	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZC3	SF-ZC3	Shingle Creek Floodplain	Sand/Mineral, Moist	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZC4	SF-ZC4	"Give The Kids The World" Boardwalk	Sand/Mineral, Moist	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Water Marks
SFWMD	SF-ZC5	SF-ZC5	Shingle Creek Floodplain	Muck, Moist	None	None	None	Lichen Lines, Buttressed Tree Trunks
SFWMD	SF-ZC6	SF-ZC6	Between Kings Point Road and FL Turnpike	Peat, Muck, Inundated	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZC7	SF-ZC7	E of International Drive S, N of World Center Drive	Sand/Mineral, Muck at Surface, Moist	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Algal Mats

SFWMD	SF-ZC8	SF-ZC8	East Pine Island - STOPR Site	Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZD1	SF-ZD1	Cypress Creek S of Lake Sheen	Sand/Mineral, Muck, Hydric, Moist	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Water Marks
SFWMD	SF-ZD2	SF-ZD2	E of SR 535, 0.5 Mile N of S Apopka Vineland Road	Sand/Mineral, Muck, Hydric, Moist	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-ZE1	SF-ZE1	Lake Britt	Inaccessible (Steep Slope)	Inaccessible (Steep Slope)	Inaccessible (Steep Slope)	Inaccessible (Steep Slope)	Lichen Lines, Adventitious Roots
SFWMD	SF-ZE2	SF-ZE2	Lake Britt	Sand/Mineral, Hydric, Saturated	None	None	None	Lichen Lines, Adventitious Roots, Rafted Debris
SFWMD	SF-ZE3	SF-ZE3	Western Way W Off 429 Through Pine Plantation	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Algal Mats, Rafted Debris
SFWMD	SF-ZF1	SF-ZF1	Reedy Creek Floodplain E of Reedy Creek Road	Sand/Mineral, hydric	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks
SFWMD	SF-ZF2	SF-ZF2	Reedy Creek Floodplain E of Old Lake Wilson Road	No Soil Sample	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Buttressed Tree Trunks, Hummocking of Pines
SFWMD	SF-ZF3	SF-ZF3	Reedy Creek Floodplain, Western Way in RCID	Sand/Mineral, Hydric	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZG1	SF-ZG1	Between CR 527 and FL Turnpike Near Ball Fields	Muck, Hydric, Inundated	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious roots, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks, Loop Roots, Cypress Knees
SFWMD	SF-ZG2	SF-ZG2	Along Balcombe Road N of 417	Muck, Saturated	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Loop Roots
SFWMD	SF-ZH1	SF-ZH1	Disney Wilderness Preserve/Walker Ranch	Muck, Hydric, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Buttressed tree Trucks,
SFWMD	SF-ZH2	SF-ZH2	Disney Wilderness Preserve/Walker Ranch	Sand/Mineral, Hydric	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZI1	SF-ZI1	Mystic Dunes Development, S of Fantasy Heights	Sand/Mineral	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots
SFWMD	SF-ZI2	SF-ZI2	Mystic Dunes Development, S of Fantasy Heights	Sand, Hydric, Moist	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Butressed Tree Trunks, Water marks
SFWMD	SF-ZJ5	SF-ZJ5	Lake Sheen	Sand/Mineral, Muck, Hydric	None	None	None	Lichen Lines, Stan Lines, Adventitious Roots, Buttressed Tree Trunks, Water Marks, Rafted Debris

SFWMD	SF-ZJ6	SF-ZJ6	Lake Sheen	Sand/Mineral, Hydric	None	None	None	Pine Edge, Adventitious Roots
SFWMD	SF-ZJ7	SF-ZJ7	E of SR 535, S of Lake Butler Road	Mucky Mineral, Hydric	None	None	None	Stain Lines, Adventitious Roots
SFWMD	SF-ZJ8	SF-ZJ8	Tibet Butler Preserve - North	Muck, Hydric, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks
SFWMD	SF-ZK1	SF-ZK1	Little Sand Lake	Muck, Saturated	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks, Rafted Debris
SFWMD	SF-ZK2	SF-ZK2	Spring Lake	Sand, Hydric, Saturated	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Water Marks, Rafted Debris
SFWMD	SF-ZL1	SF-ZL1	Three Lakes WMA Wet Prairie	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Algal Mats
SFWMD	SF-ZL2	SF-ZL2	Three Lakes WMA Cypress Dome	Sand/Mineral, Dry	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SFWMD	SF-ZN	SF-ZN	Adjacent to FL Turnpike (in Edgewater East)	Sand/Mineral	Yes	none	None	Saw Palmetto Edge
SFWMD	SF-ZW	SF-ZW	County Park S of Conroy Road	Sand/Mineral, Muck, Moist	None	None	None	Pine Edge, Saw Palmetto, Adventitious Roots, Algal Mats, Water Marks, Rafted Debris
SFWMD	SF-ZX	SF-ZX	Shadow Bay	Sand/Mineral, Hydric, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats, Water Marks, Rafted Debris, Water Lines on Dock
SFWMD	SF-ZY	SF-ZY	NW of Lake Speer at Base of Lake Wales Ridge	Muck, Saturated	None	None	None	Stain Lines, Adventitious Roots, Algal Mats
SFWMD	SF-ZZ	SF-ZZ	Lake Hartley	Hydric, Inundated	None	None	None	Adventitious Roots, Rafted Debris
SJRWMD	DMIT-4	SJ-0144	LBESF Site 2 (South)	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines
SJRWMD	DMIT-5	SJ-0143	LBESF Site 1 (North)	Sand/Mineral, Dry	None	None	None	Saw Palmetto Horses, Lichen Lines
SJRWMD	DMIT-6	SJ-0045	Bull Creek WMA North	Sand/Mineral, Saturated	None	None	None	Saw Palmetto Edge, Lichen Lines
SJRWMD	DMIT-7	SJ-JI and SJ-0046	Bull Creek WMA South	Sand/Mineral, Hydric, Saturated	None	None	None	Saw Palmetto Edge, Lichen Lines, Buttressed Tree Trunks
SJRWMD	DMIT-21	SJ-HO and SJ-0076	Dixie Lake	Sand/Mineral, Dry	None	None	None	Lichen Lines, Stain Lines, Buttressed Tree Trunk
SJRWMD	DMIT-50	SJ-JB and SJ-0077	Lake Louisa Small Isolated	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines, Stain Lines
SJRWMD	DMIT-55	SJ-0069	Prevatt Lake	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines, Stain Lines
SJRWMD	DMIT-56	SJ-0011	Lake Proctor	Sand/Mineral, Hydric, Moist	None	None	None	Saw Palmetto Edge, Lichen Lines, Stain Lines
SJRWMD	DMIT-58	SJ-IB and SJ-008	Sunset Lake	Sand/Mineral, Moist	None	None	None	Lichen Lines, Adventitious Roots
SJRWMD	DMIT-86	SJ-GA	Prairie Lake	Sand/Mineral, Saturated	None	None	None	Stain Lines, Water Marks
SJRWMD	DMIT-90	SJ-FB4 and SJ-0132	RSRSR DMIT Site SJ-FB4	Sand/Mineral	None	None	None	Saw Palmetto Edge, Lichen Lines
SJRWMD	DMIT-91	SJ-0133	RSRSR DMIT Site 1	Sand/Mineral	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines
SJRWMD	DMIT-92	SJ-0130	RSRSR DMIT Site 2	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines
SJRWMD	DMIT-99	SJ-FM and SJ-0007	Round Lake	Sand/Mineral, Hydric, Dry	None	None	None	Lichen Lines, Stain Lines

SJRWMD	DMIT-113	SJ-0078	Lake Bartho	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	DMIT-114	SJ-0080	Lake Jesup Isolated	Sand/Mineral, Moist	None	None	None	Pine Edge, Lichen Lines, Stain Lines
SJRWMD	DMIT-133	SJ-0147	Hal Scott RP Site 1	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines
SJRWMD	DMIT-162	SJ-0145	Lake Apopka Marsh FW Site 1	Sand/Mineral. Dry	None	None	None	None Observed
SJRWMD	DMIT-163	SJ-0146	Lake Apopka Marsh FW Site 2	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	DMIT-168	SJ-0042	Rock Springs Run State Reserve Site 3	Sand/Mineral	None	None	None	Saw Palmetto "Horses"
SJRWMD	DMIT-169	SJ-0043	Rock Springs Run State Reserve Site 4	Sand/Mineral	None	None	None	Saw Palmetto Edge
SJRWMD	DMIT-174	SJ-0075	Wekiva River State Park Site 1	Sand/Mineral, Hydric, Dry	None	None	None	None Observed
SJRWMD	DMIT-175	SJ-0079	Wekiva River State Park Site 2	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	DMIT-177	SJ-0150	Hal Scott Preserve and RP Site 2	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Horses
SJRWMD	DMIT-180	SJ-0015	Geneva Wilderness Area	Sand/Mineral	Yes	None	None	Saw Palmetto Edge, Lichen Lines
SJRWMD	DMIT-181	SJ-0040	Black Hammock Site 1	Sand/Mineral, Dry	None	None	None	Saw Palmetto "Horses", Lichen Lines
SJRWMD	DMIT-182	SJ-0041	Black Hammock Site 2	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge
SJRWMD	DMIT-195	SJ-0148	Hal Scott RP Site 2	Sand/Mineral, Dry	None	None	None	Moss Collars, Lichen Lines, Buttressed Tree Trunks
SJRWMD	DMIT-196	SJ-0149	Hal Scott RP Site 3	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Saw Palmetto Horses, Lichen Lines, Stain Lines, Buttressed Tree Trunks
SJRWMD	DMIT-197	SJ-0107	Hilochee WMA Site 1	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots
SJRWMD	DMIT-204	SJ-0101	Hilochee Site 3	Sand/Mineral, Dry	Yes	None	None	Lichen Lines, Adventitous Roots
SJRWMD	DMIT-205	SJ-0106	Hilochee WMA Site 4	Sand/Mineral, Dry	None	None	None	Adventitious Roots
SJRWMD	SJ-0001		Long Branch Preserve-Monitoring Well Site	Sand/Mineral,Moist	None	None	None	Saw Palmetto "Horses"
SJRWMD	SJ-0002		Long Branch Preserve-Freshwater Marsh	Sand/Mineral, Inundated	None	None	None	Saw Palmetto Edge
SJRWMD	SJ-0003		Long Branch Preserve-Pond	Sand/Mineral, Saturated	None	None	None	None Observed
SJRWMD	SJ-0004	SJ-DN	Wetland to the N of Boca Woods Drive	Sand/Mineral, Muck, Saturated	None	None	None	Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks
SJRWMD	SJ-0005	SJ-DO	UCF - Wetland E of Lake Claire	Sand/Mineral, Muck, Inundated	None	None	None	Saw Palmetto Edge
SJRWMD	SJ-0006	SJ-DQ	Lake Rouse	Sand/Mineral	None	None	None	Buttressed Tree Trunks, Water Marks, Rafted Debris
SJRWMD	SJ-0009		Gallows Lake	Sand/Mineral, Hydric, Dry	None	None	None	Lichen Lines, Adventitious Roots
SJRWMD	SJ-0010		Still Lake	Sand/Mineral, Muck, Hydric, Moist	None	None	None	Saw Palmetto Edge, Stain Lines

SJRWMD	SJ-0011	SJ-DT	W of Creel Street	Sand/Mineral	None	None	None	Lichen Lines, Buttressed Tree Trunks
SJRWMD	SJ-0018	SJ-DV	Along Econlockhatchee Road, N of Powerlines	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Cypress Inflection Points
SJRWMD	SJ-0019	SJ-DX	E of SR 551, S of Quail Pond Road	Sand/Mineral, Dry	None	None	None	Lichen Lines
SJRWMD	SJ-0021	SJ-DY	N of Hoffner, W of Semoran Boulevard	Muck, Moist	Yes	None	None	Lichen Lines, Adventitious Roots
SJRWMD	SJ-0023	SJ-HI1	Jack's Lake	Sand/Mineral, Dry	None	None	None	Lichen Lines, Adventitious Roots
SJRWMD	SJ-0024	SJ-HL	Lake Felter	Sand/Mineral, Dry	None	None	None	Lichen Lines, Adventitious Roots
SJRWMD	SJ-0028		Clear Lake	Sand/Mineral	None	None	None	Adventitious Roots
SJRWMD	SJ-0029		Quail Pond	Sand/Mineral	None	None	None	Buttressed Tree Trunks, Cypress Inflection Points
SJRWMD	SJ-0030		Lake Hodge	Sand/Mineral, Dry	Yes	None	None	Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SJRWMD	SJ-0032		Lake Marion	Sand/Mineral, Dry	None	None	None	Buttressed Tree Trunks
SJRWMD	SJ-0033		Little Lake Georgia	Sand/Mineral, Dry	None	None	None	Lichen Lines, Stain Lines, Buttressed Tree Trunks
SJRWMD	SJ-0034		Lake Spier	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0035		Lake Berry	Sand/Mineral, Dry	None	None	None	Stain Lines, Buttressed Tree Trunks
SJRWMD	SJ-0038		Lake Florence	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0048	SJ-ER	Lake Herrick	Sand/Mineral, Moist	None	None	None	Stain Lines
SJRWMD	SJ-0049	SJ-GC	Lake Lily	Sand/Mineral, Dry	None	None	None	Lichen Lines
SJRWMD	SJ-0050	SJ-GB	Spring Lake	Sand/Mineral Dry	None	None	None	Stain Lines
SJRWMD	SJ-0051	SJ-ET1	Lake Lucy	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0052	SJ-EU	Crooked Lake	Sand/Mineral	Yes	None	None	Adventitious Roots, Algal Mats
SJRWMD	SJ-0053	SJ-KD	Lake Bream	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0055	SJ-CS1	Wetland N of Jamestown Boulevard Across From Town Way	Sand/Mineral, Dry	None	None	None	Lichen Lines, Stain Lines
SJRWMD	SJ-0057	SJ-CX	Pearl Lake	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0058	SJ-CY	Mirror Lake	Sand/Mineral	None	None	None	Lichen Lines, Stain Lines
SJRWMD	SJ-0059	SJ-CZ	Pond S of SR 436/Semoran Boulevard at Executive Park Court	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0060	SJ-EY	Lake Jackson	Sand/Mineral, Moist	None	None	None	None Observed
SJRWMD	SJ-0061	SJ-EZ	Lake McCoy	Sand/Mineral, Dry	None	None	None	Lichen Lines, Stain Lines
SJRWMD	SJ-0062	SJ-FV	Buchan Pond	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0063	SJ-FS	Wolf Lake	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0064	SJ-FR	Lake Grassmere	Sand/Mineral, Dry	None	None	None	Stain Lines
SJRWMD	SJ-0065	SJ-FT	Lake Wilkins	Sand/Mineral, Dry	None	None	None	Adventitious Roots
SJRWMD	SJ-0066	SJ-FU	Lake Standish	Sand/Mineral, Dry	None	None	None	Adventitious Roots
SJRWMD	SJ-0067	SJ-FW	Heineger Lake	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0068	SJ-FY	Marshall Lake	Sand/Mineral	None	None	None	Adventitious Roots
SJRWMD	SJ-0071	SJ-EC	Lake Jean	Sand/Mineral	None	None	None	Pine Edge, Lichen Lines

SJRWMD	SJ-0072	SJ-EE	Lake Susannah	Sand/Mineral, Dry	None	None	None	Lichen Lines, Adventitious Roots
SJRWMD	SJ-0083		Secret Lake	Sand/Mineral, Moist	None	None	None	Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points
SJRWMD	SJ-0084	SJ-AR	Red Bug Lake Road at Dovera	Sand/Mineral, Muck	Yes	None	None	Lichen Lines, Stain Lines, Buttressed Tree Trunks
SJRWMD	SJ-0085	SJ-EN	Lake Lucien	Sand/Mineral, Muck	None	None	None	Buttressed Tree Trunks
SJRWMD	SJ-0086	SJ-EO	Lake Eve	Sand/Mineral, Muck	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots
SJRWMD	SJ-0087		Lake Betty	Sand/Mineral, Muck	None	None	None	Adventitious Roots, Water Marks
SJRWMD	SJ-0088		Blue Lake	Sand/Mineral	None	None	None	Water Lines on Docks/Pilings
SJRWMD	SJ-0089	SJ-AD	S of Osprey Lakes Drive	Sand/Mineral, Muck, Dry	None	None	None	Pine Edge
SJRWMD	SJ-0090		S of 419 East of Twin Rivers	Sand/Mineral, Dry	None	None	None	Moss Collars, Lichen Lines, Adventitious Roots
SJRWMD	SJ-0091		S of 419 Publix Commercial Plaza	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Buttressed Tree Trunks
SJRWMD	SJ-0092	SJ-AE	Lake Catherine	Sand/Mineral	None	None	None	Pine Edge, Lichen Lines, Stain Lines
SJRWMD	SJ-0095	SJ-AV	Eagle Boulevard Near Dodd Road	Sand/Mineral, Dry	Yes	None	None	Pine Edge, Lichen Lines
SJRWMD	SJ-0097		Marsh S of Lake Howell Lane	Sand/Mineral, Dry	None	None	None	Moss Collars, Lichen Lines, Stain Lines
SJRWMD	SJ-0098		Newberryport Avenue	Sand/Mineral, Dry	Yes	None	None	Lichen Lines, Adventitious Roots, Water Marks
SJRWMD	SJ-0099		Sunnytown Park	Sand/Mineral, Moist	None	None	None	Lichen Lines, Stain Lines
SJRWMD	SJ-0100		Maitland Community Park	Sand/Mineral, Dry	Yes	None	None	Saw Palmetto Edge, Lichen Lines, Stain Lines
SJRWMD	SJ-0103	SJ-GD	Lake Beulah	Sand/Mineral	None	None	None	Saw Palmetto Edge, Stain Lines
SJRWMD	SJ-0104	SJ-GE	Lake Reaves	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0105	SJ-GF	Sunset Lakes of Windermere	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0111	SJ-HB	Lake Montgomery	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0112	SJ-HC	N of Wilson Lake Parkway	Sand/Mineral	Yes	None	None	Adventitious Roots
SJRWMD	SJ-0113	SJ-HD	Lake Merritt, Schoolhouse Lake	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0114	SJ-HF	Grassy Lake	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0115	SJ-HH	Plum Lake	Sand/Mineral	None	None	None	Pine Edge
SJRWMD	SJ-0116	SJ-HJ	Crystal Lake	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0117	SJ-HX	N of CR 565A	Sand/Mineral	None	None	None	None Observed
SJRWMD	SJ-0118	SJ-HK	Lost Lake	Sand/Mineral	None	None	None	Adventitious Roots, Rafted Debris
SJRWMD	SJ-0119	SJ-GN	Black Stills Lake	Sand/Mineral	None	None	None	Pine Edge
SJRWMD	SJ-0121		Econlockhatchee River Canoe Launch CR 419	Sand/Mineral	None	None	None	Saw Palmetto Edge, Lichen Lines, Rafted Debris
SJRWMD	SJ-0122		Econlockhatchee River Barr Street Trailhead	Sand/Mineral, Dry	None	None	None	Pine Edge, Lichen Lines, Rafted Debris
SJRWMD	SJ-0123	SJ-KM	Wetland 13T, Cocoa Wellfield	Sand/Mineral, Dry	None	None	None	Water Marks

SJRWMD	SJ-0124	SJ-KL	Wetland East of Well 12T, Cocoa Wellfield	Sand/Mineral, Dry	None	None	None	Lichen Lines, Buttressed Tree Trunks, Water Marks
SJRWMD	SJ-0125	SJ-KK	Wetland 12T1, Cocoa Wellfield	Sand/Mineral, Dry	None	None	None	Lichen Lines, Stain Lines, Buttressed Tree Trunks
SJRWMD	SJ-0128	SJ-KI	Wetland 5T, Cocoa Wellfield	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0137	SJ-HR	Twin Oaks MHP	Sand/Mineral, Dry	None	None	None	Lichen Lines
SJRWMD	SJ-0138	SJ-JC	N Side of CR 561	Sand/Mineral Dry	Yes	None	None	Lichen Lines, Buttressed Tree Trunks
SJRWMD	SJ-0141	SJ-KC	Hartwood Marsh Road Powerline	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0142	SJ-HM2	Flat Lake North	Sand/Mineral. Dry	None	None	None	Lichen Lines
SJRWMD	SJ-0152	SJ-DR	E of Windsorgate Road, W of Northampton Road	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines
SJRWMD	SJ-0154	SJ-ED	E of SR 436, W of Forsyth Road	Sand/Mineral, Dry	Yes	None	None	Pine Edge, Saw Palmetto Edge
SJRWMD	SJ-0156	SJ-BT	Lake Seminary	Sand/Mineral, Dry	None	None	None	Lichen Lines, Water Lines on Docks/Pilings
SJRWMD	SJ-0157	SJ-EX	Lake Pleasant	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines
SJRWMD	SJ-0158	SJ-GG	Fern Bayhead	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines
SJRWMD	SJ-0159	SJ-GQ	S of FL Turnpike, N of SR 50	Sand/Mineral, Dry	Yes	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines
SJRWMD	SJ-0160	SJ-GM	Doll Lake	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0161	SJ-KH2	Lake Glen	Sand/Mineral, Dry	Yes	None	None	Buttressed Tree Trunks, Cypress Inflection Points
SJRWMD	SJ-0162	SJ-KF	Lake Emma	Sand/Mineral Dry	None	None	None	None Observed
SJRWMD	SJ-0163	SJ-CN	S of SR 46, W of Lake Markham	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Lichen Lines
SJRWMD	SJ-0164	SJ-FL	N of Boch Road, W of Plymouth Sorrento Road	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge, Stain Lines, Buttressed Tree Trunks, Water Marks
SJRWMD	SJ-0165	SJ-KA	Round Lake Road N	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0166	SJ-KB	Round Lake Road S	Sand/Mineral, Dry	None	None	None	None Observed
SJRWMD	SJ-0167	SJ-FQ	Lake Maggiore	Sand/Mineral, Dry	None	None	None	None observed
SJRWMD	SJ-0168	SJ-GI	Montverde-Ridgewood Avenue Near Bay Avenue	Sand/Mineral, Dry	Yes	None	None	Lichen Lines
SJRWMD	SJ-0169	SJ-QC	Trout Lake	Sand/Mineral, Dry	None	None	None	Water Marks
SJRWMD	SJ-0170	SJ-QA	Church Lake	Sand/Mineral, Dry	None	None	None	Pine Edge, Stain lines
SJRWMD	SJ-AJ	SJ-AJ	Lake Gem	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge
SJRWMD	SJ-LH	SJ-LH	Island Lake	Sand/Mineral	None	None	None	Pine Edge
SWFWMD	DMIT-2		Alston New Cypress	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats

SWFWMD	DMIT-43		Lake Annie (Polk)	Sand/Mineral, Inundated	None	None	None	Stain Lines, Water Marks
SWFWMD	DMIT-47		Lake Easy	Sand/Mineral, Saturated	None	None	None	Stain Lines, Adventitious Roots, Water Lines on Docks/Pilings
SWFWMD	DMIT-63		Lake Wales Ridge State Forest Arbuckle 1	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks
SWFWMD	DMIT-64		Lake Wales Ridge State Forest Arbuckle 2	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Algal Mats
SWFWMD	DMIT-65		Lake Wales Ridge State Forest Walk in the Water 1	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Adventitious Roots
SWFWMD	DMIT-66		Lake Wales Ridge State Forest Walk in the Water 2	Sand/Mineral, Hydric, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots
SWFWMD	DMIT-68		Lake Wales Ridge WEA #2	Sand/Mineral	Yes	None	None	Saw Palmetto Edge, Stain Lines, Adventitious Roots
SWFWMD	DMIT-102		Thornhill Ranch	Sand/Mineral, Hydric, Moist	None	None	None	Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks
SWFWMD	DMIT-134		Alafia River Reserve	Sand/Mineral, Moist	None	None	None	Moss Collars, Adventitious Roots, Buttressed Tree Trunks
SWFWMD	DMIT-135		Bonnet Lake Marsh	Sand/Mineral, Hydric, Saturated	None	None	None	Stain Lines, Adventitious Roots
SWFWMD	DMIT-137		Crooked Lake West 1	Sand/Mineral, Muck, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Stain Lines
SWFWMD	DMIT-138		Crooked Lake West 2	Sand Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge
SWFWMD	DMIT-139		Crooked Lake WEA 1	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge
SWFWMD	DMIT-140		Crooked Lake WEA 2	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge
SWFWMD	DMIT-141	SW-C1	Gator Creek Reserve 1	Sand/Mineral, Dry	Yes	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats
SWFWMD	DMIT-142		Gator Creek Reserve 2	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points, Algal Mats
SWFWMD	DMIT-143		Green Swamp Upper Withlacoochee	Sand/Mineral, Hydric, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Saw Palmetto "Horses" (Elevated Trunks), Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SWFWMD	DMIT-144		Hampton Colt Creek	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points, Rafted Debris
SWFWMD	DMIT-145		Hampton Gator Creek	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks

SWFWMD	DMIT-146		Hilochee Osprey West	Sand/Mineral, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SWFWMD	DMIT-147		Lake Marie	Sand/Mineral, Inundated	None	None	None	Stain Lines, Water Marks
SWFWMD	DMIT-148		Lake Marion Creek Scrub	Sand/Mineral, Hydic, Inundated	Yes	None	None	Pine Edge, Saw Palmetto Edge, Buttressed Tree Trunks
SWFWMD	DMIT-149		Lake Maude	Sand/Mineral, Saturated	None	None	None	Stain Lines, Adventitious Roots, Water Marks, Water Lines on Docks/Pilings
SWFWMD	DMIT-150		Lake Ned	Sand/Mineral, Saturated	None	None	None	Saw Palmetto Edge, Lichen Lines, Buttressed Tree Trunks, Cypress Inflection Points, Water Marks, Water Lines on Docks/Pilings
SWFWMD	DMIT-152		Richloam Upper Little Withlacoochee	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SWFWMD	DMIT-153		Saddle Blanket Scrub 1	Sand/Mineral, Hydric, Moist	None	None	None	Saw Palmetto Edge, Lichen Lines, Adventitious Roots
SWFWMD	DMIT-155		Saddle Blanket Scrub 3	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Adventitious Roots, Water Marks
SWFWMD	DMIT-156		Pasture Reserve 1	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots
SWFWMD	DMIT-157		Pasture Reserve 2	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Algal Mats
SWFWMD	DMIT-158		Pasture Reserve 3	Sand/Mineral, Hydric, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SWFWMD	DMIT-159		Tiger Creek 1	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Adventitious Roots
SWFWMD	DMIT-160	SW-H1	Tiger Creek 2	Sand/Mineral, Hydric, Dry	None	None	None	Saw Palmetto Edge, Lichen Lines, Stain Lines, Adventitious Roots, Algal Mats
SWFWMD	DMIT-199		Hickory Lake	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Stain Lines, Adventitious Roots
SWFWMD	Old DMIT-198		Bartow Airport	Sand/Mineral, Moist	None	None	None	Water Marks
SWFWMD	SW-AB	SW-AB	Near Tenoroc Transportation Facility	Muck, Hydric, Saturated	None	None	None	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks
SWFWMD	SW-AC	SW-AC	Near County Landfill	Sand/Mineral, Moist	None	None	None	Saw Palmetto Edge, Adventitious Roots, Water Marks
SWFWMD	SW-AE	SW-AE	CRUSA T9	Sand/Mineral, Moist	None	None	None	Stain Lines, Adventitious Roots, Algal Mats, Water Marks
SWFWMD	SW-AI	SW-AI	W of Lake Weohyakapka and Tiger Creek	Sand/Mineral, Dry	None	None	None	Pine Edge, Saw Palmetto Edge
SWFWMD	SW-AK	SW-AK	On Lake Wales Ridge SW of Lake Pierce	Sand/Mineral, Moist	None	None	None	None

SWFWMD	SW-AL	SW-AL	On Lake Wales Ridge SW of Lake Pierce	Sand/Mineral, Moist	None	None	None	None
SWFWMD	SW-AN	SW-AN	N Lake Pierce	Sand/Mineral, Saturated	None	None	None	Pine Edge, Stain Lines, Water Marks
SWFWMD	SW-AO	SW-AO	E of US 17/US 92	Sand/Mineral, Dry	None	None	None	Adventitious Roots, Water Marks
SWFWMD	SW-AQ	SW-AQ	Along Loughman Road (CR 54)	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Adventitious Roots
SWFWMD	SW-AR	SW-AR	S of I-4 Loughman Road Interchange	Sand/Mineral, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Stain Lines, Buttressed Tree Trunks, Cypress Inflection Points
SWFWMD	SW-AS	SW-AS	Along Loughman Road	Sand/Mineral, Moist	Yes	None	None	Stain Lines, Adventitious Roots
SWFWMD	SW-AT3	SW-AT3	S of Loughman Road	Sand/Mineral, Inundated	None	None	None	Stain Lines, Adventitious Roots
SWFWMD	SW-CC	SW-CC	Hilochee	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Inflection Points
SWFWMD	SW-D1	SW-D1	Little Lake Dinner Wetland	Sand/Mineral, Dry	None	None	None	None
SWFWMD	SW-EE	SW-EE	NERUSA - Pamplin Site	Sand/Mineral, Saturated	None	None	None	Pine Edge, Saw Palmetto Edge, Stain Lines, Adventitious Roots, Buttressed Tree Trunks
SWFWMD	SW-F1	SW-F1	Dick's Bros. Wetland	Muck, Hydric, Saturated	None	None	None	Adventitious Roots
SWFWMD	SW-FF	SW-FF	NERUSA - Loma Linda Well	Sand/Mineral, Inundated	None	None	None	Pine Edge, Saw Palmetto Edge, Adventitious Roots
SWFWMD	SW-GG	SW-GG	Standard Mine	Sand/Mineral, Inundated	None	None	None	Pine Edge, Saw Palmetto Edge, Adventitious Roots, Water Marks
SWFWMD	SW-H1A	SW-H1A	Tiger Creek Preserve - TNC	Sand/Mineral, Inundated	None	None	None	Saw Palmetto Edge, Adventitious Roots
SWFWMD	SW-LE	SW-LE	Cypress Creek #199, W17 Sentry Wetland	Sand/Mineral	Yes	Yes	Yes	Pine Edge, Moss Collars, Lichen Lines, Stain Lines, Buttressed Tree Trunks, Cypress Infection Points
SWFWMD	SW-LK	SW-LK	Green Swamp #5, #302	Sand/Mineral	None	None	None	Pine Edge, Saw Palmetto Edge, Moss Collars, Lichen Lines, Stain Lines, Adventitious Roots, Buttressed Tree Trunks, Cypress Infection Points
SWFWMD	SW-N7	SW-N7	Eagle Lake	Sand/Mineral, Inundated	None	None	None	Water Marks, Water Lines on Docks/Pilings
SWFWMD	SW-N8	SW-N8	Lake McLeod	Sand/Mineral, Moist	None	None	None	Water Marks, Water Lines on Docks/Pilings
SWFWMD	SW-QL	SW-QL	Lake Walker	Sand/Mineral	None	None	None	Water Marks, Water Lines on Docks/Pilings
SWFWMD	SW-RR	SW-RR	Lake Wales Ridge State Forest	Sand/Mineral, Dry	None	None	None	Saw Palmetto Edge, Adventitious Roots
SWFWMD	SW-UU	SW-UU	Trout Lake	Sand/Mineral, Moist	None	None	None	Pine Edge, Saw Palmetto Edge

Table E-3.

District	EM Working Group ID	Former CFCA/EMT ID	Site Name	Drainage Alteration in Wetland/ Lake	Drainage Alteration of Surrounding Lands	Stormwater Inflows	Current Status	Status in 2018 (in Support of 2020 RWSP)
SFWMD	DMIT-9		Camp Lonesome - Shallow Wet Prairie	None	Yes	None	Stressed	Unknown
SFWMD	DMIT-24		East Pine Island	None	Yes	None	Not Stressed	Not Stressed
SFWMD	DMIT-53		Lake Marion Creek East	None	None	None	Not Stressed	Unknown
SFWMD	DMIT-120		Snell West	None	None	None	Not Stressed	Unknown
SFWMD	DMIT-121	SF-ZJ3	Tibet Butler 1	None	None	None	Not Stressed	Unknown
SFWMD	DMIT-130		Lake Marion Creek West	None	None	None	Not Stressed	Unknown
SFWMD	DMIT-132	SF-WA	NW of County Highway 580 - Snell Creek - Cypress	None	None	Yes, Minimal From Adjacent Roadway	Not Stressed	Not Stressed
SFWMD	DMIT-188	SF-VC	Camp Lonesome - South of Piss Pot	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-AC	SF-AC	N of Lake Weohyakapka , E of Lake Wales Ridge	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-AD	SF-AD	N of Lake Weohyakapka , E of Lake Wales Ridge	None	Yes	None	Not Stressed	Stressed
SFWMD	SF-AF	SF-AF	Lake Ruby	Yes	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-AG	SF-AG	E of RIBS at Lake Marion Creek Drive and Hemlock	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-AJ	SF-AJ	W of San Miguel (Off Marigold)	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-AL	SF-AL	Along CR 535	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-AN	SF-AN	Off Mor Tay Road	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-AS	SF-AS	End of Cypress Road Across Golf Green	None	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-AT	SF-AT	N of Black Lake Road	None	Yes	None	Stressed	Stressed
SFWMD	SF-AU	SF-AU	Providence, SE of US 17/US 92	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-AV1	SF-AV1	American Equities, SE of US 17/US 92	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-BG	SF-BG	SE of Lake Butler	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-BI	SF-BI	E of SR 535, S of Reaves Road	None	None	None	Not Stressed	Not Stressed

SFWMD	SF-BM1	SF-BM1	Big Bend Swamp	Yes	Yes	Yes	Stressed	Unknown
SFWMD	SF-BM2	SF-BM2	Jug Creek Swamp	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-BM3	SF-BM3	Big Bend Swamp	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-BR	SF-BR	Off Lost Cove Road, W of Apopka Vineland Road	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-BS	SF-BS	E of Conroy, S of Millenia	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-BU	SF-BU	Lake Catherine Swamp	None	Yes	Yes	Stressed	Unknown
SFWMD	SF-BV	SF-BV	Americana at Whitcomb	Yes	Yes	Yes	Stressed	Unknown
SFWMD	SF-BW	SF-BW	W Side of US 17/US 92, N of Americana	Yes	Yes	Yes	Stressed	Unknown
SFWMD	SF-BY	SF-BY	Lake Fran Conservation Easement off MetroWest Road	Yes	Yes	Yes	Stressed	Stressed
SFWMD	SF-BZ	SF-BZ	E of SR 435, N of McLeod	Yes	Yes	Yes	Stressed	Stressed
SFWMD	SF-CE	SF-CE	South Park Circle	None	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-CG	SF-CG	Between Lake Tohopekaliga and Alligator Lake	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-CJ	SF-CJ	N of Clay Whaley, W of FL Turnpike	None	Yes	None	Not Stressed	Not Stressed
SFWMD	SF-CL	SF-CL	NE of Lake Center	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-CP	SF-CP	Kissimmee, S of Mills Slough Road and W of FL Turnpike	None	Yes	None	Not Stressed	Not Stressed
SFWMD	SF-CQ1	SF-CQ1	Kissimmee, E of Simpson Road and N of New Beginning	None	Yes	Yes	Stressed	Stressed
SFWMD	SF-CT	SF-CT	E of Wetherbee, S of Palm Bay	None	Yes	None	Not Stressed	Not Stressed
SFWMD	SF-CY	SF-CY	Three Lakes WMA Site III	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-CZ	SF-CZ	Three Lakes WMA Isolated Wetland Prairie	None	None	None	Not Stressed	Unknown
SFWMD	SF-DB	SF-DB	Lake Gifford	None	Yes	Yes	Stressed	Stressed
SFWMD	SF-DC	SF-DC	Lake Marion	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-DF	SF-DF	Along Lake Hancock Road at Porter Road	Yes	Yes	Yes	Not Stressed	Unknown

SFWMD	SF-DG	SF-DG	Near Site 10D	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-DI	SF-DI	Along Consulate Road W of FL Turnpike	None	Yes	Yes	Stressed	Stressed
SFWMD	SF-DJ	SF-DJ	Lake Ellenore	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-DM	SF-DM	Palm Lake - Lake Littoral Marsh	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-DO	SF-DO	SE of US 192 Near Intersection with CR 545	None	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-DX	SF-DX	Off CR 535 S of US17/US92	None	Yes	None	Stressed	Stressed
SFWMD	SF-EE	SF-EE	Celebration	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-EF	SF-EF	Reedy Creek	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-EQ	SF-EQ	Hilton Resort, Off Foxfire Circle	Yes	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-ET	SF-ET	International Drive S, W of Continental Gateway	None	Yes	None	Not Stressed	Unknown
SFWMD	SF-EW	SF-EW	N Off Osceola Polk Line Road	None	Yes	No	Not Stressed	Not Stressed
SFWMD	SF-FA	SF-FA	DeLuca Preserve	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-FD	SF-FD	DeLuca Preserve	Yes	None	None	Not Stressed	Not Stressed
SFWMD	SF-VA	SF-VA	Between Mann and Tiny Roads on Lake Wales Ridge	None	None	None	Not Stressed	Unknown
SFWMD	SF-VB	SF-VB	Between Mann and Tiny Roads on Lake Wales Ridge	None	Yes	None	Not Stressed	Unknown
SFWMD	SF-VD	SF-VD	Camp Lonesome	None	Yes	None	Stressed	Unknown
SFWMD	SF-WB	SF-WB	Snell Creek - Wet Prairie	None	None	No	Not Stressed	Not Stressed
SFWMD	SF-WD	SF-WD	N of Sinclair Just W of Old Lake Wilson Road	Yes	yes	Yes	Not Stressed	Stressed
SFWMD	SF-WF	SF-WF	N of US 192 Curve at Black Lake Road	None	Yes	None	Not Stressed	Stressed
SFWMD	SF-WG	SF-WG	E of SR 545, S Side of Siedel Road	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-WH	SF-WH	E of SR 545 Off Lake Hancock Road	Yes	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-WJ	SF-WJ	Along Rheams Road, S of SR 535	None	None	None	Not Stressed	Not Stressed

SFWMD	SF-WK	SF-WK	Along SR 535, E of Rheams Road	Yes	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-WL	SF-WL	W of Powerlines, Between Rheams and Overstreet	None	Yes	None	Not Stressed	Unknown
SFWMD	SF-WM	SF-WM	Off Rheams Road Near Disney World Employee Entrance	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-WN	SF-WN	Lake Sharpe	None	Yes	Yes	Stressed	Unknown
SFWMD	SF-WT	SF-WT	Split Oak Forest Mitigation Park Cypress Head	None	None	None	Not Stressed	Unknown
SFWMD	SF-WU	SF-WU	Split Oak Forest Mitigation Park Cypress Head	None	None	Yes	Not Stressed	Not Stressed
SFWMD	SF-WV	SF-WV	Split Oak Forest Mitigation Park Cypress Head	None	None	None	Stressed	Not Stressed
SFWMD	SF-WW	SF-WW	Off SR 527A	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-WX	SF-WX	Off SR 527A	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-WY	SF-WY	Off SR 527A	None	Yes	Yes	Stressed	Not Stressed
SFWMD	SF-WZ	SF-WZ	Off SR 527A	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-XA	SF-XA	Near Intersection of Marigold and Bourne	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-XB1	SF-XB1	Lake Speer	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-XB2	SF-XB2	W of Lake Speer at Base of Lake Wales Ridge	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-XC	SF-XC	Behind Ramada at US 192 and Poinciana Boulevard	Yes	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-XD	SF-XD	Along International Drive W of Gateway Point Drive	None	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-XE	SF-XE	E of Lake Tohopekaliga, Near Hawkin Drive	None	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-XF	SF-XF	Grass Lake	None	Yes	None	Not Stressed	Not Stressed
SFWMD	SF-XG	SF-XG	Hickorynut Lake	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-XH	SF-XH	Reedy Creek	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-XI	SF-XI	Off CR 531 Near Bellalago	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-XJ	SF-XJ	Lake Reedy Floodplain	None	Yes	None	Not Stressed	Unknown

SFWMD	SF-XL	SF-XL	SE of Lake Bryan	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-XM	SF-XM	Off Reedy Creek Road, W of Treatment Plant	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-XN	SF-XN	Near Solivita Road, S of County Highway 580	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-XO	SF-XO	Near Solivita Road, S of County Highway 580	None	Yes	None	Not Stressed	Not Stressed
SFWMD	SF-XP	SF-XP	E of Shingle Creek Floodplain	Yes	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-XQ	SF-XQ	S of US 17/US 92 and W of CR 535	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-XR	SF-XR	W of CR 531	Yes	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-XS	SF-XS	Providence Development	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-XT	SF-XT	US 17/US 92 at Kinney Harmon	Yes	Yes	Yes	Stressed	Unknown
SFWMD	SF-XU	SF-XU	Disney Wilderness Preserve/Walker Ranch	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-XV	SF-XV	Disney Wilderness Preserve/Walker Ranch	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-XW	SF-XW	Disney Wilderness Preserve/Walker Ranch	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-XY	SF-XY	Walker Ranch - WR8	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-YA	SF-YA	Lake Russell	None	None	None	Not Stressed	Unknown
SFWMD	SF-YB	SF-YB	Tri County Road	None	Yes	Yes, Minimal From Adjacent Roadway	Not Stressed	Stressed
SFWMD	SF-YC	SF-YC	Near Goodman Road	None	Yes	No	Not Stressed	Not Stressed
SFWMD	SF-YD	SF-YD	Apache Trail	None	Yes	Yes, Minimal from Adjacent Roadway	Not Stressed	Not Stressed
SFWMD	SF-YE	SF-YE	E of Old Lake Wilson Road Near Reedy Creek Floodplain	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-YF	SF-YF	Reedy Creek Floodplain E of Old Lake Wilson Road	None	Yes	Yes	Stressed	Stressed
SFWMD	SF-YG	SF-YG	West of Narcoossee Road	None	Yes	Yes	Not Stressed	Stressed

SFWMD	SF-YH	SF-YH	West of Narcoossee Road	Yes	Yes	Yes	Stressed	Unknown
SFWMD	SF-YI	SF-YI	N of Dowden Road	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-YN	SF-YN	Shadow Bay Park	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-ZA1	SF-ZA1	Davenport Creek Swamp	None	Yes	None	Stressed	Stressed
SFWMD	SF-ZA2	SF-ZA2	Davenport Creek Swamp Well OSF-102 OSF-103	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZA3	SF-ZA3	Goodman Road	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZB1	SF-ZB1	Near Boggy Creek Road	None	Yes	None	Not Stressed	Not Stressed
SFWMD	SF-ZB2	SF-ZB2	E of FL Turnpike Off Florida Road	Yes	Yes	None	Stressed	Unknown
SFWMD	SF-ZC1	SF-ZC1	W of John Young at 417 Interchange	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZC2	SF-ZC2	Shingle Creek E of Sandy Hill Road	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZC3	SF-ZC3	Shingle Creek Floodplain	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZC4	SF-ZC4	"Give The Kids The World" Boardwalk	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZC5	SF-ZC5	Shingle Creek Floodplain	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZC6	SF-ZC6	Between Kings Point Road and FL Turnpike	None	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-ZC7	SF-ZC7	E of International Drive S, N of World Center Drive	None	Yes	None	Not Stressed	Unknown
SFWMD	SF-ZC8	SF-ZC8	East Pine Island - STOPR Site	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-ZD1	SF-ZD1	Cypress Creek S of Lake Sheen	None	None	None	Not Stressed	Unknown
SFWMD	SF-ZD2	SF-ZD2	E of SR 535, 0.5 Mile N of S Apopka Vineland Road	None	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZE1	SF-ZE1	Lake Britt	Yes	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-ZE2	SF-ZE2	Lake Britt	Yes	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-ZE3	SF-ZE3	Western Way W Off 429 Through Pine Plantation	None	Yes	None	Not Stressed	Not Stressed

SFWMD	SF-ZF1	SF-ZF1	Reedy Creek Floodplain E of Reedy Creek Road	None	None	None	Not Stressed	Unknown
SFWMD	SF-ZF2	SF-ZF2	Reedy Creek Floodplain E of Old Lake Wilson Road	None	Yes	None	Not Stressed	Unknown
SFWMD	SF-ZF3	SF-ZF3	Reedy Creek Floodplain, Western Way in RCID	None	Yes	None	Not Stressed	Unknown
SFWMD	SF-ZG1	SF-ZG1	Between CR 527 and FL Turnpike Near Ball Fields	Yes	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-ZG2	SF-ZG2	Along Balcombe Road N of 417	Yes	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-ZH1	SF-ZH1	Disney Wilderness Preserve/Walker Ranch	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-ZH2	SF-ZH2	Disney Wilderness Preserve/Walker Ranch	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-ZI1	SF-ZI1	Mystic Dunes Development, S of Fantasy Heights	Yes	Yes	Yes	Stressed	Stressed
SFWMD	SF-ZI2	SF-ZI2	Mystic Dunes Development, S of Fantasy Heights	Yes	Yes	Yes	Stressed	Stressed
SFWMD	SF-ZJ5	SF-ZJ5	Lake Sheen	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-ZJ6	SF-ZJ6	Lake Sheen	None	None	None	Not Stressed	Unknown
SFWMD	SF-ZJ7	SF-ZJ7	E of SR 535, S of Lake Butler Road	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-ZJ8	SF-ZJ8	Tibet Butler Preserve - North	None	Yes	Yes	Not Stressed	Stressed
SFWMD	SF-ZK1	SF-ZK1	Little Sand Lake	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZK2	SF-ZK2	Spring Lake	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZL1	SF-ZL1	Three Lakes WMA Wet Prairie	None	None	None	Not Stressed	Not Stressed
SFWMD	SF-ZL2	SF-ZL2	Three Lakes WMA Cypress Dome	None	None	Yes	Not Stressed	Not Stressed
SFWMD	SF-ZN	SF-ZN	Adjacent to FL Turnpike (in Edgewater East)	None	Yes	Yes	Stressed	Stressed
SFWMD	SF-ZW	SF-ZW	County Park S of Conroy Road	Yes	Yes	Yes	Not Stressed	Unknown
SFWMD	SF-ZX	SF-ZX	Shadow Bay	Yes	Yes	Yes	Not Stressed	Unknown

SFWMD	SF-ZY	SF-ZY	NW of Lake Speer at Base of Lake Wales Ridge	None	Yes	Yes	Not Stressed	Not Stressed
SFWMD	SF-ZZ	SF-ZZ	Lake Hartley	Yes	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	DMIT-4	SJ-0144	LBESF Site 2 (South)	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-5	SJ-0143	LBESF Site 1 (North)	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-6	SJ-0045	Bull Creek WMA North	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-7	SJ-JI and SJ-0046	Bull Creek WMA South	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-21	SJ-HO and SJ-0076	Dixie Lake	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-50	SJ-JB and SJ-0077	Lake Louisa Small Isolated	None	None	None	Stressed	Stressed
SJRWMD	DMIT-55	SJ-0069	Prevatt Lake	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-56	SJ-0011	Lake Proctor	None	None	None	Stressed	Unknown
SJRWMD	DMIT-58	SJ-IB and SJ-008	Sunset Lake	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	DMIT-86	SJ-GA	Prairie Lake	None	Yes	Yes	Not Stressed	Stressed
SJRWMD	DMIT-90	SJ-FB4 and SJ-0132	RSRSR DMIT Site SJ-FB4	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-91	SJ-0133	RSRSR DMIT Site 1	None	Yes	None	Not Stressed	Unknown
SJRWMD	DMIT-92	SJ-0130	RSRSR DMIT Site 2	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-99	SJ-FM and SJ-0007	Round Lake	None	None	Yes	Stressed	Stressed
SJRWMD	DMIT-113	SJ-0078	Lake Bartho	None	None	None	Stressed	Unknown
SJRWMD	DMIT-114	SJ-0080	Lake Jesup Isolated	None	Yes	None	Not Stressed	Unknown
SJRWMD	DMIT-133	SJ-0147	Hal Scott RP Site 1	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-162	SJ-0145	Lake Apopka Marsh FW Site 1	None	None	None	Stressed	Unknown
SJRWMD	DMIT-163	SJ-0146	Lake Apopka Marsh FW Site 2	None	None	None	Stressed	Unknown
SJRWMD	DMIT-168	SJ-0042	Rock Springs Run State Reserve Site 3	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-169	SJ-0043	Rock Springs Run State Reserve Site 4	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-174	SJ-0075	Wekiva River State Park Site 1	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-175	SJ-0079	Wekiva River State Park Site 2	Yes	Yes	None	Stressed	Unknown
SJRWMD	DMIT-177	SJ-0150	Hal Scott Preserve and RP Site 2	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-180	SJ-0015	Geneva Wilderness Area	Yes	Yes	None	Stressed	Unknown
SJRWMD	DMIT-181	SJ-0040	Black Hammock Site 1	None	None	None	Not Stressed	Unknown

SJRWMD	DMIT-182	SJ-0041	Black Hammock Site 2	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-195	SJ-0148	Hal Scott RP Site 2	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-196	SJ-0149	Hal Scott RP Site 3	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-197	SJ-0107	Hilochee WMA Site 1	None	None	None	Not Stressed	Unknown
SJRWMD	DMIT-204	SJ-0101	Hilochee Site 3	None	Yes	None	Stressed	Unknown
SJRWMD	DMIT-205	SJ-0106	Hilochee WMA Site 4	None	None	None	Not Stressed	Unknown
SJRWMD	SJ-0001		Long Branch Preserve- Monitoring Well Site	None	Yes	None	Not Stressed	Unknown
SJRWMD	SJ-0002		Long Branch Preserve- Freshwater Marsh	None	None	None	Not Stressed	Unknown
SJRWMD	SJ-0003		Long Branch Preserve- Pond	None	None	Yes	Not Stressed	Unknown
SJRWMD	SJ-0004	SJ-DN	Wetland to the N of Boca Woods Drive	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0005	SJ-DO	UCF - Wetland E of Lake Claire	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0006	SJ-DQ	Lake Rouse	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0009		Gallows Lake	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0010		Still Lake	Yes	None	None	Stressed	Unknown
SJRWMD	SJ-0011	SJ-DT	W of Creel Street	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0018	SJ-DV	Along Econlockhatchee Road, N of Powerlines	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0019	SJ-DX	E of SR 551, S of Quail Pond Road	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0021	SJ-DY	N of Hoffner, W of Semoran Boulevard	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0023	SJ-HI1	Jack's Lake	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0024	SJ-HL	Lake Felter	None	Yes	Yes	Stressed	Not Stressed
SJRWMD	SJ-0028		Clear Lake	None	Yes	None	Not Stressed	Unknown
SJRWMD	SJ-0029		Quail Pond	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0030		Lake Hodge	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0032		Lake Marion	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0033		Little Lake Georgia	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0034		Lake Spier	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0035		Lake Berry	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0038		Lake Florence	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0048	SJ-ER	Lake Herrick	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0049	SJ-GC	Lake Lily	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0050	SJ-GB	Spring Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0051	SJ-ET1	Lake Lucy	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0052	SJ-EU	Crooked Lake	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0053	SJ-KD	Lake Bream	None	Yes	Yes	Stressed	Stressed

SJRWMD	SJ-0055	SJ-CS1	Wetland N of Jamestown Boulevard Across From Town Way	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0057	SJ-CX	Pearl Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0058	SJ-CY	Mirror Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0059	SJ-CZ	Pond S of SR 436/Semoran Boulevard at Executive Park Court	Yes	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0060	SJ-EY	Lake Jackson	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0061	SJ-EZ	Lake McCoy	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0062	SJ-FV	Buchan Pond	None	None	None	Not Stressed	Not Stressed
SJRWMD	SJ-0063	SJ-FS	Wolf Lake	None	None	None	Stressed	Stressed
SJRWMD	SJ-0064	SJ-FR	Lake Grassmere	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0065	SJ-FT	Lake Wilkins	None	Yes	None	Stressed	Stressed
SJRWMD	SJ-0066	SJ-FU	Lake Standish	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0067	SJ-FW	Heineger Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0068	SJ-FY	Marshall Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0071	SJ-EC	Lake Jean	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0072	SJ-EE	Lake Susannah	Yes	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0083		Secret Lake	Yes	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0084	SJ-AR	Red Bug Lake Road at Dovera	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0085	SJ-EN	Lake Lucien	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0086	SJ-EO	Lake Eve	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0087		Lake Betty	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0088		Blue Lake	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0089	SJ-AD	S of Osprey Lakes Drive	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0090		S of 419 East of Twin Rivers	None	Yes	None	Not Stressed	Unknown
SJRWMD	SJ-0091		S of 419 Publix Commercial Plaza	Yes	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0092	SJ-AE	Lake Catherine	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0095	SJ-AV	Eagle Boulevard Near Dodd Road	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0097		Marsh S of Lake Howell Lane	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0098		Newberryport Avenue	Yes	Yes	Yes	Stressed	Unknown
SJRWMD	SJ-0099		Sunnytown Park	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0100		Maitland Community Park	None	Yes	Yes	Stressed	Unknown
SJRWMD	SJ-0103	SJ-GD	Lake Beulah	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0104	SJ-GE	Lake Reaves	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0105	SJ-GF	Sunset Lakes of Windermere	None	Yes	Yes	Not Stressed	Not Stressed

SJRWMD	SJ-0111	SJ-HB	Lake Montgomery	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0112	SJ-HC	N of Wilson Lake Parkway	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0113	SJ-HD	Lake Merritt, Schoolhouse Lake	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0114	SJ-HF	Grassy Lake	Yes	Yes	Yes	Not Stressed	Stressed
SJRWMD	SJ-0115	SJ-HH	Plum Lake	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0116	SJ-HJ	Crystal Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0117	SJ-HX	N of CR 565A	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0118	SJ-HK	Lost Lake	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0119	SJ-GN	Black Stills Lake	None	Yes	Yes	Stressed	Not Stressed
SJRWMD	SJ-0121		Econlockhatchee River Canoe Launch CR 419	None	Yes	Yes	Not Stressed	Unknown
SJRWMD	SJ-0122		Econlockhatchee River Barr Street Trailhead	None	None	None	Not Stressed	Unknown
SJRWMD	SJ-0123	SJ-KM	Wetland 13T, Cocoa Wellfield	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0124	SJ-KL	Wetland East of Well 12T, Cocoa Wellfield	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0125	SJ-KK	Wetland 12T1, Cocoa Wellfield	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0128	SJ-KI	Wetland 5T, Cocoa Wellfield	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0137	SJ-HR	Twin Oaks MHP	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0138	SJ-JC	N Side of CR 561	Yes	Yes	None	Stressed	Stressed
SJRWMD	SJ-0141	SJ-KC	Hartwood Marsh Road Powerline	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0142	SJ-HM2	Flat Lake North	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0152	SJ-DR	E of Windsorgate Road, W of Northampton Road	Yes	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0154	SJ-ED	E of SR 436, W of Forsyth Road	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0156	SJ-BT	Lake Seminary	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0157	SJ-EX	Lake Pleasant	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0158	SJ-GG	Fern Bayhead	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0159	SJ-GQ	S of FL Turnpike, N of SR 50	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0160	SJ-GM	Doll Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0161	SJ-KH2	Lake Glen	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0162	SJ-KF	Lake Emma	None	Yes	Yes	Stressed	Stressed

SJRWMD	SJ-0163	SJ-CN	S of SR 46, W of Lake Markham	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0164	SJ-FL	N of Boch Road, W of Plymouth Sorrento Road	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0165	SJ-KA	Round Lake Road N	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0166	SJ-KB	Round Lake Road S	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0167	SJ-FQ	Lake Maggiore	None	Yes	None	Not Stressed	Not Stressed
SJRWMD	SJ-0168	SJ-GI	Montverde-Ridgewood Avenue Near Bay Avenue	Yes	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-0169	SJ-QC	Trout Lake	None	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-0170	SJ-QA	Church Lake	None	Yes	Yes	Stressed	Stressed
SJRWMD	SJ-AJ	SJ-AJ	Lake Gem	Yes	Yes	Yes	Not Stressed	Not Stressed
SJRWMD	SJ-LH	SJ-LH	Island Lake	None	Yes	Yes	Not Stressed	Not Stressed
SWFWMD	DMIT-2		Alston New Cypress	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-43		Lake Annie (Polk)	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-47		Lake Easy	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-63		Lake Wales Ridge State Forest Arbuckle 1	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-64		Lake Wales Ridge State Forest Arbuckle 2	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-65		Lake Wales Ridge State Forest Walk in the Water 1	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-66		Lake Wales Ridge State Forest Walk in the Water 2	None	None	None	Not Stressed	Not Stressed
SWFWMD	DMIT-68		Lake Wales Ridge WEA #2	None	None	Yes	Stressed	Stressed
SWFWMD	DMIT-102		Thornhill Ranch	None	Yes	Yes	Not Stressed	Unknown
SWFWMD	DMIT-134		Alafia River Reserve	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-135		Bonnet Lake Marsh	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-137		Crooked Lake West 1	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-138		Crooked Lake West 2	None	None	None	Stressed	Unknown
SWFWMD	DMIT-139		Crooked Lake WEA 1	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-140		Crooked Lake WEA 2	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-141	SW-C1	Gator Creek Reserve 1	None	None	None	Stressed	Stressed
SWFWMD	DMIT-142		Gator Creek Reserve 2	None	None	None	Not Stressed	Unknown

SWFWMD	DMIT-143		Green Swamp Upper Withlacoochee	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-144		Hampton Colt Creek	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-145		Hampton Gator Creek	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-146		Hilochee Osprey West	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-147		Lake Marie	None	None	Yes	Not Stressed	Unknown
SWFWMD	DMIT-148		Lake Marion Creek Scrub	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-149		Lake Maude	None	None	Yes	Not Stressed	Unknown
SWFWMD	DMIT-150		Lake Ned	None	None	Yes	Not Stressed	Unknown
SWFWMD	DMIT-152		Richloam Upper Little Withlacoochee	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-153		Saddle Blanket Scrub 1	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-155		Saddle Blanket Scrub 3	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-156		Pasture Reserve 1	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-157		Pasture Reserve 2	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-158		Pasture Reserve 3	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-159		Tiger Creek 1	None	None	None	Not Stressed	Unknown
SWFWMD	DMIT-160	SW-H1	Tiger Creek 2	None	None	None	Not Stressed	Not Stressed
SWFWMD	DMIT-199		Hickory Lake	None	None	None	Not Stressed	Unknown
SWFWMD	Old DMIT-198		Bartow Airport	Yes	None	None	Not Stressed	Unknown
SWFWMD	SW-AB	SW-AB	Near Tenoroc Transportation Facility	None	Yes	None	Not Stressed	Stressed
SWFWMD	SW-AC	SW-AC	Near County Landfill	None	Yes	None	Not Stressed	Stressed
SWFWMD	SW-AE	SW-AE	CRUSA T9	None	None	Yes	Not Stressed	Stressed
SWFWMD	SW-AI	SW-AI	W of Lake Weohyakapka and Tiger Creek	None	None	None	Stressed	Not Stressed
SWFWMD	SW-AK	SW-AK	On Lake Wales Ridge SW of Lake Pierce	None	None	None	Not Stressed	Stressed
SWFWMD	SW-AL	SW-AL	On Lake Wales Ridge SW of Lake Pierce	None	None	None	Not Stressed	Stressed
SWFWMD	SW-AN	SW-AN	N Lake Pierce	None	None	None	Not Stressed	Not Stressed
SWFWMD	SW-AO	SW-AO	E of US 17/US 92	None	None	Yes	Not Stressed	Stressed
SWFWMD	SW-AQ	SW-AQ	Along Loughman Road (CR 54)	None	Yes	Yes	Not Stressed	Not Stressed
SWFWMD	SW-AR	SW-AR	S of I-4 Loughman Road Interchange	None	Yes	Yes	Not Stressed	Not Stressed

SWFWMD	SW-AS	SW-AS	Along Loughman Road	None	Yes	Yes	Stressed	Stressed
SWFWMD	SW-AT3	SW-AT3	S of Loughman Road	None	None	Yes	Not Stressed	Not Stressed
SWFWMD	SW-CC	SW-CC	Hilochee	Yes	None	None	Not Stressed	Not Stressed
SWFWMD	SW-D1	SW-D1	Little Lake Dinner Wetland	None	None	None	Stressed	Stressed
SWFWMD	SW-EE	SW-EE	NERUSA - Pamplin Site	None	Yes	Yes	Not Stressed	Not Stressed
SWFWMD	SW-F1	SW-F1	Dick's Bros. Wetland	None	None	Yes	Not Stressed	Stressed
SWFWMD	SW-FF	SW-FF	NERUSA - Loma Linda Well	None	None	Yes	Not Stressed	Not Stressed
SWFWMD	SW-GG	SW-GG	Standard Mine	None	None	None	Not Stressed	Stressed
SWFWMD	SW-H1A	SW-H1A	Tiger Creek Preserve - TNC	None	None	None	Not Stressed	Not Stressed
SWFWMD	SW-LE	SW-LE	Cypress Creek #199, W17 Sentry Wetland	None	None	None	Not Stressed	Stressed
SWFWMD	SW-LK	SW-LK	Green Swamp #5, #302	None	None	None	Not Stressed	Not Stressed
SWFWMD	SW-N7	SW-N7	Eagle Lake	None	None	Yes	Not Stressed	Unknown
SWFWMD	SW-N8	SW-N8	Lake McLeod	None	None	Yes	Not Stressed	Unknown
SWFWMD	SW-QL	SW-QL	Lake Walker	None	None	Yes	Not Stressed	Stressed
SWFWMD	SW-RR	SW-RR	Lake Wales Ridge State Forest	None	None	None	Not Stressed	Not Stressed
SWFWMD	SW-UU	SW-UU	Trout Lake	None	None	None	Not Stressed	Stressed

Table E-4.

District	EM Working Group ID	Former CFCA/EMT ID	Site Name	Reason for Change in Stress Status	Physiographic Region	Ridge	Longitude	Latitude
SFWMD	DMIT-9		Camp Lonesome - Shallow Wet Prairie		Plains	No	-81.161826	28.080663
SFWMD	DMIT-24		East Pine Island		Plains	No	-81.446594	28.37863
SFWMD	DMIT-53		Lake Marion Creek East		Ridge	Yes	-81.512348	28.100563
SFWMD	DMIT-120		Snell West		Ridge	Yes	-81.55099	28.133719
SFWMD	DMIT-121	SF-ZJ3	Tibet Butler 1		Ridge	Yes	-81.535461	28.44811
SFWMD	DMIT-130		Lake Marion Creek West		Plains	No	-81.515431	28.10482
SFWMD	DMIT-132	SF-WA	NW of County Highway 580 - Snell Creek - Cypress		Ridge	No	-81.543635	28.13299
SFWMD	DMIT-188	SF-VC	Camp Lonesome - South of Piss Pot		Plains	No	-81.170716	28.076513
SFWMD	SF-AC	SF-AC	N of Lake Weohyakapka , E of Lake Wales Ridge		Plains	No	-81.424032	27.862624
SFWMD	SF-AD	SF-AD	N of Lake Weohyakapka , E of Lake Wales Ridge	No Indicators of Hydrologic Stress Noted	Plains	No	-81.417806	27.862678
SFWMD	SF-AF	SF-AF	Lake Ruby	No Indicators of Hydrologic Stress Noted	Ridge	Yes	-81.499286	28.39788
SFWMD	SF-AG	SF-AG	E of RIBS at Lake Marion Creek Drive and Hemlock		Ridge	No	-81.489922	28.06148
SFWMD	SF-AJ	SF-AJ	W of San Miguel (Off Marigold)		Plains	No	-81.510353	28.172218
SFWMD	SF-AL	SF-AL	Along CR 535		Plains	No	-81.463184	28.24811
SFWMD	SF-AN	SF-AN	Off Mor Tay Road		Ridge	Yes	-81.609696	28.280233
SFWMD	SF-AS	SF-AS	End of Cypress Road Across Golf Green	Hydrology Appeared Normal, Many Indicators Present, Minimal Number of Trees With Exposed Roots but Trees Were Healthy and Straight	Ridge	Yes	-81.616511	28.359224
SFWMD	SF-AT	SF-AT	N of Black Lake Road		Ridge	Yes	-81.600443	28.344939
SFWMD	SF-AU	SF-AU	Providence, SE of US 17/US 92		Ridge	Yes	-81.557159	28.210364
SFWMD	SF-AV1	SF-AV1	American Equities, SE of US 17/US 92		Ridge	Yes	-81.553724	28.197034
SFWMD	SF-BG	SF-BG	SE of Lake Butler		Ridge	No	-81.545176	28.468681
SFWMD	SF-BI	SF-BI	E of SR 535, S of Reaves Road		Ridge	Yes	-81.555668	28.516614
SFWMD	SF-BM1	SF-BM1	Big Bend Swamp	Wetland Blanketed in Lygodium With Dead/Dying Trees	Plains	No	-81.141311	28.183869
SFWMD	SF-BM2	SF-BM2	Jug Creek Swamp		Plains	No	-81.126176	28.172812
SFWMD	SF-BM3	SF-BM3	Big Bend Swamp		Plains	No	-81.120597	28.165977

SFWMD	SF-BR	SF-BR	Off Lost Cove Road, W of Apopka Vineland Road		Ridge	Yes	-81.505758	28.45335
SFWMD	SF-BS	SF-BS	E of Conroy, S of Millenia		Plains	No	-81.424694	28.489636
SFWMD	SF-BU	SF-BU	Lake Catherine Swamp		Plains	No	-81.413621	28.49535
SFWMD	SF-BV	SF-BV	Americana at Whitcomb	Majority of Wetland Filled for Development	Plains	No	-81.415532	28.489312
SFWMD	SF-BW	SF-BW	W Side of US 17/US 92, N of Americana		Ridge	No	-81.398616	28.485694
SFWMD	SF-BY	SF-BY	Lake Fran Conservation Easement off MetroWest Road		Ridge	No	-81.451848	28.52085
SFWMD	SF-BZ	SF-BZ	E of SR 435, N of McLeod		Plains	No	-81.443911	28.509442
SFWMD	SF-CE	SF-CE	South Park Circle	No Indicators of Hydrologic Stress Noted	Plains	No	-81.421644	28.44553
SFWMD	SF-CG	SF-CG	Between Lake Tohopekaliga and Alligator Lake		Plains	No	-81.269368	28.198394
SFWMD	SF-CJ	SF-CJ	N of Clay Whaley, W of FL Turnpike		Plains	No	-81.328417	28.224973
SFWMD	SF-CL	SF-CL	NE of Lake Center		Plains	No	-81.179653	28.283942
SFWMD	SF-CP	SF-CP	Kissimmee, S of Mills Slough Road and W of FL Turnpike		Plains	No	-81.372259	28.313671
SFWMD	SF-CQ1	SF-CQ1	Kissimmee, E of Simpson Road and N of New Beginning	Heavy Invasion of Invasive Species	Plains	No	-81.345482	28.298791
SFWMD	SF-CT	SF-CT	E of Wetherbee, S of Palm Bay		Plains	No	-81.37304	28.406063
SFWMD	SF-CY	SF-CY	Three Lakes WMA Site III		Plains	No	-81.073427	27.966053
SFWMD	SF-CZ	SF-CZ	Three Lakes WMA Isolated Wetland Prairie		Plains	No	-81.145803	27.895454
SFWMD	SF-DB	SF-DB	Lake Gifford		Ridge	Yes	-81.643061	28.361329
SFWMD	SF-DC	SF-DC	Lake Marion		Ridge	Yes	-81.533056	28.0564
SFWMD	SF-DF	SF-DF	Along Lake Hancock Road at Porter Road		Ridge	Yes	-81.598542	28.448949
SFWMD	SF-DG	SF-DG	Near Site 10D		Ridge	Yes	-81.609243	28.445231
SFWMD	SF-DI	SF-DI	Along Consulate Road W of FL Turnpike		Plains	No	-81.413694	28.437002
SFWMD	SF-DJ	SF-DJ	Lake Ellenore		Ridge	No	-81.408514	28.464504
SFWMD	SF-DM	SF-DM	Palm Lake - Lake Littoral Marsh		Ridge	Yes	-81.496935	28.478858
SFWMD	SF-DO	SF-DO	SE of US 192 Near Intersection with CR 545	No Indicators of Hydrologic Stress Noted	Plains	No	-81.645315	28.343667

SFWMD	SF-DX	SF-DX	Off CR 535 S of US17/US92		Plains	No	-81.465594	28.232383
SFWMD	SF-EE	SF-EE	Celebration		Plains	No	-81.555941	28.306906
SFWMD	SF-EF	SF-EF	Reedy Creek		Plains	No	-81.533248	28.317871
SFWMD	SF-EQ	SF-EQ	Hilton Resort, Off Foxfire Circle	Wetland Appears to be Recovering From Previously Noted Stress, No New Indicators of Hydrologic Stress Noted	Ridge	Yes	-81.49853	28.403293
SFWMD	SF-ET	SF-ET	International Drive S, W of Continental Gateway		Plains	No	-81.516122	28.356848
SFWMD	SF-EW	SF-EW	N Off Osceola Polk Line Road		Ridge	Yes	-81.599731	28.268461
SFWMD	SF-FA	SF-FA	DeLuca Preserve		Plains	No	-81.019853	27.662089
SFWMD	SF-FD	SF-FD	DeLuca Preserve		Plains	No	-80.923118	27.703394
SFWMD	SF-VA	SF-VA	Between Mann and Tiny Roads on Lake Wales Ridge		Ridge	Yes	-81.618263	28.484465
SFWMD	SF-VB	SF-VB	Between Mann and Tiny Roads on Lake Wales Ridge		Ridge	Yes	-81.614509	28.485925
SFWMD	SF-VD	SF-VD	Camp Lonesome		Plains	No	-81.194203	28.066714
SFWMD	SF-WB	SF-WB	Snell Creek - Wet Prairie		Ridge	No	-81.544952	28.131931
SFWMD	SF-WD	SF-WD	N of Sinclair Just W of Old Lake Wilson Road	The Wetland is of Low Quality Vegetatively, However, No Signs of Hydrologic Stress Were Noted	Ridge	Yes	-81.594717	28.296793
SFWMD	SF-WF	SF-WF	N of US 192 Curve at Black Lake Road	Hydrology Appropriate, Recruitment of Cypress, no Upland Species Invading Wetlands, 2008 Assessment was in a Very Dry Period, Site has Been Inundated Throughout the Winter in the Majority of Aerials Since 2008	Ridge	Yes	-81.606119	28.348862
SFWMD	SF-WG	SF-WG	E of SR 545, S Side of Siedel Road		Ridge	Yes	-81.625096	28.419059
SFWMD	SF-WH	SF-WH	E of SR 545 Off Lake Hancock Road		Ridge	Yes	-81.615708	28.449202
SFWMD	SF-WJ	SF-WJ	Along Rheams Road, S of SR 535		Ridge	Yes	-81.556282	28.441113
SFWMD	SF-WK	SF-WK	Along SR 535, E of Rheams Road		Ridge	Yes	-81.554239	28.442928
SFWMD	SF-WL	SF-WL	W of Powerlines, Between Rheams and Overstreet		Plains	No	-81.584195	28.444121
SFWMD	SF-WM	SF-WM	Off Rheams Road Near Disney World Employee Entrance		Plains	No	-81.579602	28.434537
SFWMD	SF-WN	SF-WN	Lake Sharpe		Ridge	Yes	-81.567162	28.432068

SFWMD	SF-WT	SF-WT	Split Oak Forest Mitigation Park Cypress Head		Plains	No	-81.207309	28.358205
SFWMD	SF-WU	SF-WU	Split Oak Forest Mitigation Park Cypress Head		Plains	No	-81.201597	28.358305
SFWMD	SF-WV	SF-WV	Split Oak Forest Mitigation Park Cypress Head	Indicators of Hydrologic Stress Were Noted	Plains	No	-81.205067	28.364734
SFWMD	SF-WW	SF-WW	Off SR 527A		Plains	No	-81.349269	28.438646
SFWMD	SF-WX	SF-WX	Off SR 527A		Plains	No	-81.35097	28.435498
SFWMD	SF-WY	SF-WY	Off SR 527A	Soil Subsidence Noted, Tree Coverage Sparse, Heavy Lygodium Coverage, Water Levels at Peak of Wet Season Lower Than Expected	Plains	No	-81.300185	28.230752
SFWMD	SF-WZ	SF-WZ	Off SR 527A		Plains	No	-81.299677	28.225093
SFWMD	SF-XA	SF-XA	Near Intersection of Marigold and Bourne		Plains	No	-81.504073	28.190088
SFWMD	SF-XB1	SF-XB1	Lake Speer		Plains	No	-81.604939	28.47718
SFWMD	SF-XB2	SF-XB2	W of Lake Speer at Base of Lake Wales Ridge		Plains	No	-81.609221	28.480052
SFWMD	SF-XC	SF-XC	Behind Ramada at US 192 and Poinciana Boulevard		Plains	No	-81.48776	28.331733
SFWMD	SF-XD	SF-XD	Along International Drive W of Gateway Point Drive	Wetland had Minimal Indicators of Hydrologic Stress, Old Tree Falls with Strong Evidence of New Recruitment of Wetland Tree Species	Plains	No	-81.502444	28.353689
SFWMD	SF-XE	SF-XE	E of Lake Tohopekaliga, Near Hawkin Drive	Wetland had Minimal Indicators of Hydrologic Stress, Old Tree Falls with Strong Evidence of New Recruitment of Wetland Tree Species	Plains	No	-81.433677	28.172087
SFWMD	SF-XF	SF-XF	Grass Lake		Ridge	Yes	-81.647156	28.349803
SFWMD	SF-XG	SF-XG	Hickorynut Lake		Ridge	Yes	-81.636044	28.421085
SFWMD	SF-XH	SF-XH	Reedy Creek		Plains	No	-81.532189	28.28809
SFWMD	SF-XI	SF-XI	Off CR 531 Near Bellalago		Plains	No	-81.439279	28.191916
SFWMD	SF-XJ	SF-XJ	Lake Reedy Floodplain		Plains	No	-81.617147	28.420053
SFWMD	SF-XL	SF-XL	SE of Lake Bryan		Ridge	Yes	-81.492676	28.363313
SFWMD	SF-XM	SF-XM	Off Reedy Creek Road, W of Treatment Plant		Plains	No	-81.586832	28.345798
SFWMD	SF-XN	SF-XN	Near Solivita Road, S of County Highway 580		Plains	No	-81.490194	28.133728
SFWMD	SF-XO	SF-XO	Near Solivita Road, S of County Highway 580		Plains	No	-81.494471	28.135431

SFWMD	SF-XP	SF-XP	E of Shingle Creek Floodplain	No Indicators of Hydrologic Stress Noted	Plains	No	-81.444868	28.315867
SFWMD	SF-XQ	SF-XQ	S of US 17/US 92 and W of CR 535		Plains	No	-81.464615	28.251084
SFWMD	SF-XR	SF-XR	W of CR 531	Wetland was Observed to Have Slightly Lower Than Normal Water Levels But There Were No Indicators of Hydrologic Stress Noted	Plains	No	-81.439954	28.227182
SFWMD	SF-XS	SF-XS	Providence Development		Plains	No	-81.540083	28.210375
SFWMD	SF-XT	SF-XT	US 17/US 92 at Kinney Harmon		Plains	No	-81.361738	28.384292
SFWMD	SF-XU	SF-XU	Disney Wilderness Preserve/Walker Ranch		Plains	No	-81.394084	28.053479
SFWMD	SF-XV	SF-XV	Disney Wilderness Preserve/Walker Ranch		Plains	No	-81.394025	28.050299
SFWMD	SF-XW	SF-XW	Disney Wilderness Preserve/Walker Ranch		Plains	No	-81.399884	28.057562
SFWMD	SF-XY	SF-XY	Walker Ranch - WR8	Not Stressed	Plains	No	-81.417485	28.106642
SFWMD	SF-YA	SF-YA	Lake Russell		Plains	No	-81.422163	28.128414
SFWMD	SF-YB	SF-YB	Tri County Road	Water Levels in Wetland Have Come Up in Past Several Years, No Indicators of Hydrologic Stress Noted	Ridge	Yes	-81.64491	28.274923
SFWMD	SF-YC	SF-YC	Near Goodman Road		Ridge	Yes	-81.62438	28.287969
SFWMD	SF-YD	SF-YD	Apache Trail		Ridge	Yes	-81.63956	28.29676
SFWMD	SF-YE	SF-YE	E of Old Lake Wilson Road Near Reedy Creek Floodplain		Plains	No	-81.585668	28.311273
SFWMD	SF-YF	SF-YF	Reedy Creek Floodplain E of Old Lake Wilson Road		Plains	No	-81.58638	28.315144
SFWMD	SF-YG	SF-YG	West of Narcoossee Road	No Indicators of Stress Present During Time of Inspection, Adjacent Development May Have Increased Hydrology by Filling of the Adjacent Ag Ditches	Plains	No	-81.24756	28.369271
SFWMD	SF-YH	SF-YH	West of Narcoossee Road		Plains	No	-81.253863	28.366331
SFWMD	SF-YI	SF-YI	N of Dowden Road		Plains	No	-81.236076	28.430206
SFWMD	SF-YN	SF-YN	Shadow Bay Park		Ridge	Yes	-81.479676	28.492433
SFWMD	SF-ZA1	SF-ZA1	Davenport Creek Swamp		Plains	No	-81.615704	28.324011
SFWMD	SF-ZA2	SF-ZA2	Davenport Creek Swamp Well OSF-102 OSF-103		Ridge	Yes	-81.633704	28.334059
SFWMD	SF-ZA3	SF-ZA3	Goodman Road		Ridge	Yes	-81.647565	28.325747
SFWMD	SF-ZB1	SF-ZB1	Near Boggy Creek Road		Plains	No	-81.359889	28.31426

SFWMD	SF-ZB2	SF-ZB2	E of FL Turnpike Off Florida Road		Plains	No	-81.36993	28.328702
SFWMD	SF-ZC1	SF-ZC1	W of John Young at 417 Interchange		Plains	No	-81.436009	28.372014
SFWMD	SF-ZC2	SF-ZC2	Shingle Creek E of Sandy Hill Road		Plains	No	-81.43689	28.396084
SFWMD	SF-ZC3	SF-ZC3	Shingle Creek Floodplain		Plains	No	-81.450167	28.318312
SFWMD	SF-ZC4	SF-ZC4	"Give The Kids The World" Boardwalk		Plains	No	-81.460342	28.288265
SFWMD	SF-ZC5	SF-ZC5	Shingle Creek Floodplain		Plains	No	-81.449538	28.282922
SFWMD	SF-ZC6	SF-ZC6	Between Kings Point Road and FL Turnpike	No Indicators of Hydrologic Stress Noted	Plains	No	-81.434931	28.459519
SFWMD	SF-ZC7	SF-ZC7	E of International Drive S, N of World Center Drive		Plains	No	-81.481235	28.359185
SFWMD	SF-ZC8	SF-ZC8	East Pine Island - STOPR Site		Plains	No	-81.455024	28.38107
SFWMD	SF-ZD1	SF-ZD1	Cypress Creek S of Lake Sheen		Plains	No	-81.508265	28.397569
SFWMD	SF-ZD2	SF-ZD2	E of SR 535, 0.5 Mile N of S Apopka Vineland Road		Plains	No	-81.518092	28.391819
SFWMD	SF-ZE1	SF-ZE1	Lake Britt	Surrounding Development and Introduction of RIBs Nearby, Leading to Altered Hydrology, In This Case, Inputs to Lake are Greater Than in Previous Assessments	Ridge	No	-81.615704	28.324011
SFWMD	SF-ZE2	SF-ZE2	Lake Britt	The Hydrology Appears to be Improving, Nuisance and Exotics Primarily Along the Edges, Wetland Areas Throughout are Representative of Reference System in Western Orange County	Ridge	Yes	-81.633704	28.334059
SFWMD	SF-ZE3	SF-ZE3	Western Way W Off 429 Through Pine Plantation		Ridge	Yes	-81.647565	28.325747
SFWMD	SF-ZF1	SF-ZF1	Reedy Creek Floodplain E of Reedy Creek Road		Plains	No	-81.581373	28.342657
SFWMD	SF-ZF2	SF-ZF2	Reedy Creek Floodplain E of Old Lake Wilson Road		Plains	No	-81.586877	28.317796
SFWMD	SF-ZF3	SF-ZF3	Reedy Creek Floodplain, Western Way in RCID		Plains	No	-81.580705	28.364243

SFWMD	SF-ZG1	SF-ZG1	Between CR 527 and FL Turnpike Near Ball Fields		Plains	No	-81.383044	28.37957
SFWMD	SF-ZG2	SF-ZG2	Along Balcombe Road N of 417		Plains	No	-81.399105	28.380938
SFWMD	SF-ZH1	SF-ZH1	Disney Wilderness Preserve/Walker Ranch		Plains	No	-81.404763	28.067872
SFWMD	SF-ZH2	SF-ZH2	Disney Wilderness Preserve/Walker Ranch		Plains	No	-81.410571	28.07405
SFWMD	SF-ZI1	SF-ZI1	Mystic Dunes Development, S of Fantasy Heights		Ridge	Yes	-81.602339	28.3148
SFWMD	SF-ZI2	SF-ZI2	Mystic Dunes Development, S of Fantasy Heights		Ridge	Yes	-81.594693	28.315161
SFWMD	SF-ZJ5	SF-ZJ5	Lake Sheen		Ridge	Yes	-81.52586	28.425257
SFWMD	SF-ZJ6	SF-ZJ6	Lake Sheen		Ridge	Yes	-81.526328	28.424272
SFWMD	SF-ZJ7	SF-ZJ7	E of SR 535, S of Lake Butler Road		Ridge	Yes	-81.568709	28.492579
SFWMD	SF-ZJ8	SF-ZJ8	Tibet Butler Preserve - North	No Indicators of Hydrologic Stressed Noted	Ridge	Yes	-81.546604	28.448967
SFWMD	SF-ZK1	SF-ZK1	Little Sand Lake		Plains	No	-81.479402	28.445309
SFWMD	SF-ZK2	SF-ZK2	Spring Lake		Plains	No	-81.481489	28.457107
SFWMD	SF-ZL1	SF-ZL1	Three Lakes WMA Wet Prairie		Plains	No	-81.072074	27.967865
SFWMD	SF-ZL2	SF-ZL2	Three Lakes WMA Cypress Dome		Plains	No	-81.072612	27.967832
SFWMD	SF-ZN	SF-ZN	Adjacent to FL Turnpike (in Edgewater East)		Plains	No	-81.311737	28.214526
SFWMD	SF-ZW	SF-ZW	County Park S of Conroy Road		Ridge	Yes	-81.483416	28.488325
SFWMD	SF-ZX	SF-ZX	Shadow Bay		Ridge	Yes	-81.481921	28.491165
SFWMD	SF-ZY	SF-ZY	NW of Lake Speer at Base of Lake Wales Ridge		Ridge	Yes	-81.60427	28.483336
SFWMD	SF-ZZ	SF-ZZ	Lake Hartley		Ridge	Yes	-81.617122	28.478422
SJRWMD	DMIT-4	SJ-0144	LBESF Site 2 (South)		Plains	No	-81.119186	28.675178
SJRWMD	DMIT-5	SJ-0143	LBESF Site 1 (North)		Plains	No	-81.128156	28.694469
SJRWMD	DMIT-6	SJ-0045	Bull Creek WMA North		Plains	No	-80.978192	28.107889
SJRWMD	DMIT-7	SJ-JI and SJ-0046	Bull Creek WMA South		Plains	No	-80.946731	28.012586
SJRWMD	DMIT-21	SJ-HO and SJ-0076	Dixie Lake		Plains	No	-81.73611	28.439285
SJRWMD	DMIT-50	SJ-JB and SJ-0077	Lake Louisa Small Isolated		Plains	No	-81.738914	28.45532
SJRWMD	DMIT-55	SJ-0069	Prevatt Lake		Ridge	Yes	-81.489006	28.708328
SJRWMD	DMIT-56	SJ-0011	Lake Proctor		Plains	No	-81.101522	28.733503

SJRWMD	DMIT-58	SJ-IB and SJ-008	Sunset Lake		Ridge	Yes	-81.888733	28.57621
SJRWMD	DMIT-86	SJ-GA	Prairie Lake		Ridge	Yes	-81.5113	28.59775
SJRWMD	DMIT-90	SJ-FB4 and SJ-0132	RSRSR DMIT Site SJ-FB4		Plains	No	-81.446417	28.776972
SJRWMD	DMIT-91	SJ-0133	RSRSR DMIT Site 1		Plains	No	-81.439014	28.775753
SJRWMD	DMIT-92	SJ-0130	RSRSR DMIT Site 2		Plains	No	-81.453389	28.771739
SJRWMD	DMIT-99	SJ-FM and SJ-0007	Round Lake		Ridge	Yes	-81.593986	28.779517
SJRWMD	DMIT-113	SJ-0078	Lake Bartho		Ridge	Yes	-81.511628	28.779594
SJRWMD	DMIT-114	SJ-0080	Lake Jesup Isolated		Plains	No	-81.186333	28.722928
SJRWMD	DMIT-133	SJ-0147	Hal Scott RP Site 1		Plains	No	-81.134989	28.477192
SJRWMD	DMIT-162	SJ-0145	Lake Apopka Marsh FW Site 1		Plains	No	-81.712078	28.659633
SJRWMD	DMIT-163	SJ-0146	Lake Apopka Marsh FW Site 2		Plains	No	-81.720206	28.664481
SJRWMD	DMIT-168	SJ-0042	Rock Springs Run State Reserve Site 3		Plains	No	-81.457592	28.78165
SJRWMD	DMIT-169	SJ-0043	Rock Springs Run State Reserve Site 4		Plains	No	-81.458503	28.785628
SJRWMD	DMIT-174	SJ-0075	Wekiva River State Park Site 1		Plains	No	-81.381472	28.848147
SJRWMD	DMIT-175	SJ-0079	Wekiva River State Park Site 2		Ridge	Yes	-81.517361	28.772786
SJRWMD	DMIT-177	SJ-0150	Hal Scott Preserve and RP Site 2		Plains	No	-81.112522	28.511767
SJRWMD	DMIT-180	SJ-0015	Geneva Wilderness Area		Plains	No	-81.121958	28.708047
SJRWMD	DMIT-181	SJ-0040	Black Hammock Site 1		Plains	No	-81.150064	28.713292
SJRWMD	DMIT-182	SJ-0041	Black Hammock Site 2		Plains	No	-81.152303	28.716436
SJRWMD	DMIT-195	SJ-0148	Hal Scott RP Site 2		Plains	No	-81.134403	28.469742
SJRWMD	DMIT-196	SJ-0149	Hal Scott RP Site 3		Plains	No	-81.116767	28.470767
SJRWMD	DMIT-197	SJ-0107	Hilochee WMA Site 1		Ridge	Yes	-81.717694	28.408547
SJRWMD	DMIT-204	SJ-0101	Hilochee Site 3		Ridge	Yes	-81.730972	28.408686
SJRWMD	DMIT-205	SJ-0106	Hilochee WMA Site 4		Ridge	Yes	-81.723436	28.407997
SJRWMD	SJ-0001		Long Branch Preserve-Monitoring Well Site		Plains	No	-81.11266	28.52737
SJRWMD	SJ-0002		Long Branch Preserve-Freshwater Marsh		Plains	No	-81.11829	28.52838
SJRWMD	SJ-0003		Long Branch Preserve-Pond		Plains	No	-81.12399	28.52856
SJRWMD	SJ-0004	SJ-DN	Wetland to the N of Boca Woods Drive		Plains	No	-81.17994	28.59897
SJRWMD	SJ-0005	SJ-DO	UCF - Wetland E of Lake Claire		Plains	No	-81.1988	28.60972

SJRWMD	SJ-0006	SJ-DQ	Lake Rouse		Plains	No	-81.21067	28.574636
SJRWMD	SJ-0009		Gallows Lake		Ridge	Yes	-81.899917	28.572997
SJRWMD	SJ-0010		Still Lake		Plains	No	-81.096278	28.729281
SJRWMD	SJ-0011	SJ-DT	W of Creel Street		Plains	No	-81.234301	28.546109
SJRWMD	SJ-0018	SJ-DV	Along Econlockhatchee Road, N of Powerlines		Plains	No	-81.254217	28.503131
SJRWMD	SJ-0019	SJ-DX	E of SR 551, S of Quail Pond Road		Plains	No	-81.282834	28.499261
SJRWMD	SJ-0021	SJ-DY	N of Hoffner, W of Semoran Boulevard		Plains	No	-81.323643	28.481015
SJRWMD	SJ-0023	SJ-HI1	Jack's Lake		Ridge	Yes	-81.737161	28.550569
SJRWMD	SJ-0024	SJ-HL	Lake Felter	Encroachment of Woody Species Within Wetland Edge	Ridge	Yes	-81.725906	28.517819
SJRWMD	SJ-0028		Clear Lake		Plains	No	-81.295411	28.669433
SJRWMD	SJ-0029		Quail Pond		Plains	No	-81.334925	28.670939
SJRWMD	SJ-0030		Lake Hodge		Plains	No	-81.321678	28.691311
SJRWMD	SJ-0032		Lake Marion		Ridge	Yes	-81.365997	28.679678
SJRWMD	SJ-0033		Little Lake Georgia		Plains	No	-81.248547	28.613025
SJRWMD	SJ-0034		Lake Spier		Ridge	Yes	-81.329653	28.579081
SJRWMD	SJ-0035		Lake Berry		Ridge	Yes	-81.332836	28.588636
SJRWMD	SJ-0038		Lake Florence		Ridge	Yes	-81.503653	28.570725
SJRWMD	SJ-0048	SJ-ER	Lake Herrick		Ridge	Yes	-81.48597	28.546516
SJRWMD	SJ-0049	SJ-GC	Lake Lily		Ridge	Yes	-81.5351197	28.545106
SJRWMD	SJ-0050	SJ-GB	Spring Lake		Ridge	Yes	-81.52019	28.579513
SJRWMD	SJ-0051	SJ-ET1	Lake Lucy		Ridge	Yes	-81.496285	28.572747
SJRWMD	SJ-0052	SJ-EU	Crooked Lake		Ridge	Yes	-81.479914	28.593932
SJRWMD	SJ-0053	SJ-KD	Lake Bream		Ridge	Yes	-81.502587	28.616505
SJRWMD	SJ-0055	SJ-CS1	Wetland N of Jamestown Boulevard Across From Town Way		Plains	No	-81.412987	28.682599
SJRWMD	SJ-0057	SJ-CX	Pearl Lake		Plains	No	-81.423835	28.662355
SJRWMD	SJ-0058	SJ-CY	Mirror Lake		Plains	No	-81.439949	28.668807
SJRWMD	SJ-0059	SJ-CZ	Pond S of SR 436/Semoran Boulevard at Executive Park Court		Plains	No	-81.446332	28.669161
SJRWMD	SJ-0060	SJ-EY	Lake Jackson		Ridge	Yes	-81.464944	28.667673
SJRWMD	SJ-0061	SJ-EZ	Lake McCoy		Ridge	Yes	-81.499793	28.687825
SJRWMD	SJ-0062	SJ-FV	Buchan Pond		Ridge	Yes	-81.516053	28.694499
SJRWMD	SJ-0063	SJ-FS	Wolf Lake		Ridge	Yes	-81.536044	28.726883
SJRWMD	SJ-0064	SJ-FR	Lake Grassmere		Ridge	Yes	-81.583073	28.718371
SJRWMD	SJ-0065	SJ-FT	Lake Wilkins		Ridge	Yes	-81.570095	28.7071
SJRWMD	SJ-0066	SJ-FU	Lake Standish		Ridge	Yes	-81.552964	28.699122
SJRWMD	SJ-0067	SJ-FW	Heineger Lake		Ridge	Yes	-81.548291	28.683764
SJRWMD	SJ-0068	SJ-FY	Marshall Lake		Ridge	Yes	-81.53655	28.676639
SJRWMD	SJ-0071	SJ-EC	Lake Jean		Plains	No	-81.277456	28.58834
SJRWMD	SJ-0072	SJ-EE	Lake Susannah		Plains	No	-81.326685	28.562677
SJRWMD	SJ-0083		Secret Lake		Plains	No	-81.327764	28.674678
SJRWMD	SJ-0084	SJ-AR	Red Bug Lake Road at Dovera		Plains	No	-81.242109	28.657847
SJRWMD	SJ-0085	SJ-EN	Lake Lucien		Ridge	Yes	-81.392999	28.628357
SJRWMD	SJ-0086	SJ-EO	Lake Eve		Plains	No	-81.425048	28.628925
SJRWMD	SJ-0087		Lake Betty		Ridge	Yes	-81.450769	28.637811
SJRWMD	SJ-0088		Blue Lake		Ridge	Yes	-81.466589	28.657678

SJRWMD	SJ-0089	SJ-AD	S of Osprey Lakes Drive		Plains	No	-81.119683	28.65125
SJRWMD	SJ-0090		S of 419 East of Twin Rivers		Plains	No	-81.159283	28.65125
SJRWMD	SJ-0091		S of 419 Publix Commercial Plaza		Plains	No	-81.138808	28.645356
SJRWMD	SJ-0092	SJ-AE	Lake Catherine		Plains	No	-81.126883	28.640683
SJRWMD	SJ-0095	SJ-AV	Eagle Boulevard Near Dodd Road		Plains	No	-81.282406	28.657699
SJRWMD	SJ-0097		Marsh S of Lake Howell Lane		Plains	No	-81.306994	28.632211
SJRWMD	SJ-0098		Newberryport Avenue		Ridge	Yes	-81.360758	28.674289
SJRWMD	SJ-0099		Sunnytown Park		Ridge	Yes	-81.344756	28.666814
SJRWMD	SJ-0100		Maitland Community Park		Ridge	Yes	-81.348867	28.639044
SJRWMD	SJ-0103	SJ-GD	Lake Beulah		Ridge	Yes	-81.563417	28.535486
SJRWMD	SJ-0104	SJ-GE	Lake Reaves		Ridge	Yes	-81.563581	28.527316
SJRWMD	SJ-0105	SJ-GF	Sunset Lakes of Windermere		Ridge	Yes	-81.575446	28.508779
SJRWMD	SJ-0111	SJ-HB	Lake Montgomery		Plains	No	-81.774594	28.645278
SJRWMD	SJ-0112	SJ-HC	N of Wilson Lake Parkway		Plains	No	-81.79045	28.627944
SJRWMD	SJ-0113	SJ-HD	Lake Merritt, Schoolhouse Lake		Plains	No	-81.772253	28.625534
SJRWMD	SJ-0114	SJ-HF	Grassy Lake	No Stress Indicators Observed, Water Levels Have Rebounded	Ridge	Yes	-81.746686	28.593224
SJRWMD	SJ-0115	SJ-HH	Plum Lake		Ridge	Yes	-81.734339	28.579484
SJRWMD	SJ-0116	SJ-HJ	Crystal Lake		Plains	No	-81.761107	28.552424
SJRWMD	SJ-0117	SJ-HX	N of CR 565A	Woody Encroachment, Died Back	Plains	No	-81.806031	28.571156
SJRWMD	SJ-0118	SJ-HK	Lost Lake		Ridge	Yes	-81.718196	28.534995
SJRWMD	SJ-0119	SJ-GN	Black Stills Lake	Encroachment of Upland Species (Pine), Different Evaluation Location Than Original Assessment	Ridge	Yes	-81.704766	28.572279
SJRWMD	SJ-0121		Econlockhatchee River Canoe Launch CR 419		Plains	No	-81.169628	28.655728
SJRWMD	SJ-0122		Econlockhatchee River Barr Street Trailhead		Plains	No	-81.156183	28.685183
SJRWMD	SJ-0123	SJ-KM	Wetland 13T, Cocoa Wellfield		Plains	No	-81.015044	28.395192
SJRWMD	SJ-0124	SJ-KL	Wetland East of Well 12T, Cocoa Wellfield		Plains	No	-81.022227	28.395128
SJRWMD	SJ-0125	SJ-KK	Wetland 12T1, Cocoa Wellfield		Plains	No	-81.025023	28.39417
SJRWMD	SJ-0128	SJ-KI	Wetland 5T, Cocoa Wellfield		Plains	No	-81.070609	28.403397
SJRWMD	SJ-0137	SJ-HR	Twin Oaks MHP		Ridge	Yes	-81.68886	28.367959
SJRWMD	SJ-0138	SJ-JC	N Side of CR 561		Ridge	Yes	-81.819232	28.427372

SJRWMD	SJ-0141	SJ-KC	Hartwood Marsh Road Powerline		Ridge	Yes	-81.679394	28.516815
SJRWMD	SJ-0142	SJ-HM2	Flat Lake North		Ridge	Yes	-81.671258	28.491917
SJRWMD	SJ-0152	SJ-DR	E of Windsorgate Road, W of Northampton Road		Plains	No	-81.183788	28.517035
SJRWMD	SJ-0154	SJ-ED	E of SR 436, W of Forsyth Road		Plains	No	-81.300988	28.588944
SJRWMD	SJ-0156	SJ-BT	Lake Seminary		Ridge	Yes	-81.358267	28.643573
SJRWMD	SJ-0157	SJ-EX	Lake Pleasant		Ridge	Yes	-81.48147	28.657798
SJRWMD	SJ-0158	SJ-GG	Fern Bayhead		Ridge	Yes	-81.609169	28.513219
SJRWMD	SJ-0159	SJ-GQ	S of FL Turnpike, N of SR 50		Ridge	Yes	-81.691221	28.550676
SJRWMD	SJ-0160	SJ-GM	Doll Lake		Ridge	Yes	-81.697789	28.576326
SJRWMD	SJ-0161	SJ-KH2	Lake Glen		Plains	No	-81.372778	28.453176
SJRWMD	SJ-0162	SJ-KF	Lake Emma		Plains	No	-81.352599	28.760704
SJRWMD	SJ-0163	SJ-CN	S of SR 46, W of Lake Markham		Plains	No	-81.393253	28.812655
SJRWMD	SJ-0164	SJ-FL	N of Boch Road, W of Plymouth Sorrento Road		Ridge	Yes	-81.571647	28.782743
SJRWMD	SJ-0165	SJ-KA	Round Lake Road N		Ridge	Yes	-81.594627	28.740392
SJRWMD	SJ-0166	SJ-KB	Round Lake Road S		Ridge	Yes	-81.595821	28.739527
SJRWMD	SJ-0167	SJ-FQ	Lake Maggiore		Ridge	Yes	-81.614744	28.765387
SJRWMD	SJ-0168	SJ-GI	Montverde-Ridgewood Avenue Near Bay Avenue		Plains	No	-81.668668	28.594794
SJRWMD	SJ-0169	SJ-QC	Trout Lake		Ridge	Yes	-81.712212	28.447999
SJRWMD	SJ-0170	SJ-QA	Church Lake		Ridge	Yes	-81.841699	28.644937
SJRWMD	SJ-AJ	SJ-AJ	Lake Gem		Plains	No	-81.207313	28.645854
SJRWMD	SJ-LH	SJ-LH	Island Lake		Plains	No	-81.363091	28.696596
SWFWMD	DMIT-2		Alston New Cypress		Plains	No	-82.08964567	28.18567618
SWFWMD	DMIT-43		Lake Annie (Polk)		Ridge	Yes	-81.6023000	28.0001000
SWFWMD	DMIT-47		Lake Easy		Ridge	Yes	-81.5565000	27.8556000
SWFWMD	DMIT-63		Lake Wales Ridge State Forest Arbuckle 1		Ridge	Yes	-81.4805780	27.6877330
SWFWMD	DMIT-64		Lake Wales Ridge State Forest Arbuckle 2		Ridge	Yes	-81.4719820	27.6960540
SWFWMD	DMIT-65		Lake Wales Ridge State Forest Walk in the Water 1		Ridge	Yes	-81.4740150	27.7826290
SWFWMD	DMIT-66		Lake Wales Ridge State Forest Walk in the Water 2		Ridge	Yes	-81.4716054	27.8038330
SWFWMD	DMIT-68		Lake Wales Ridge WEA #2		Ridge	Yes	-81.5953900	27.9231500
SWFWMD	DMIT-102		Thornhill Ranch		Ridge	Yes	-81.655695	28.210436

SWFWMD	DMIT-134		Alafia River Reserve		Plains	No	-82.099113	27.884819
SWFWMD	DMIT-135		Bonnet Lake Marsh		Plains	No	-81.660400	28.156200
SWFWMD	DMIT-137		Crooked Lake West 1		Ridge	Yes	-81.63666	27.81041
SWFWMD	DMIT-138		Crooked Lake West 2		Ridge	Yes	-81.60222	27.81767
SWFWMD	DMIT-139		Crooked Lake WEA 1		Plains	No	-81.608340	27.7369500
SWFWMD	DMIT-140		Crooked Lake WEA 2		Plains	No	-81.610506	27.7438140
SWFWMD	DMIT-141	SW-C1	Gator Creek Reserve 1		Plains	No	-81.984671	28.177670
SWFWMD	DMIT-142		Gator Creek Reserve 2		Plains	No	-81.96270238	28.18305925
SWFWMD	DMIT-143		Green Swamp Upper Withlacoochee		Plains	No	-81.91861057	28.33092054
SWFWMD	DMIT-144		Hampton Colt Creek		Plains	No	-82.00668119	28.29332113
SWFWMD	DMIT-145		Hampton Gator Creek		Plains	No	-82.00139941	28.24948406
SWFWMD	DMIT-146		Hilochee Osprey West		Plains	No	-81.7097829	28.1922841
SWFWMD	DMIT-147		Lake Marie		Ridge	Yes	-81.6082390	28.0197600
SWFWMD	DMIT-148		Lake Marion Creek Scrub		Ridge	Yes	-81.5609893	28.1539524
SWFWMD	DMIT-149		Lake Maude		Ridge	Yes	-81.7210670	28.0398350
SWFWMD	DMIT-150		Lake Ned		Ridge	Yes	-81.6696800	27.9961360
SWFWMD	DMIT-152		Richloam Upper Little Withlacoochee		Plains	No	-81.92879496	28.45795847
SWFWMD	DMIT-153		Saddle Blanket Scrub 1		Ridge	Yes	-81.5802400	27.6632100
SWFWMD	DMIT-155		Saddle Blanket Scrub 3		Ridge	Yes	-81.5741360	27.6695150
SWFWMD	DMIT-156		Pasture Reserve 1		Plains	No	-81.8784786	28.48880429
SWFWMD	DMIT-157		Pasture Reserve 2		Plains	No	-81.87649184	28.49061684
SWFWMD	DMIT-158		Pasture Reserve 3		Plains	No	-81.87048163	28.49040079
SWFWMD	DMIT-159		Tiger Creek 1		Ridge	Yes	-81.4835600	27.8080330
SWFWMD	DMIT-160	SW-H1	Tiger Creek 2		Ridge	Yes	-81.478144	27.811083
SWFWMD	DMIT-199		Hickory Lake		Ridge	Yes	-81.5403382	27.6992509
SWFWMD	Old DMIT-198		Bartow Airport	Not Selected as DMIT Monitoring Site Because of Ditch and Concern That Mowing Would Occur Into Wetland Edge	Plains	No	-81.794570	27.943710
SWFWMD	SW-AB	SW-AB	Near Tenoroc Transportation Facility	No indicators of stress observed, adjacent stormwater pond does not appear to be impacting wetland (however, because of that confounding factor, this wetland was not selected as a DMIT site)	Plains	No	-81.864391	28.071341
SWFWMD	SW-AC	SW-AC	Near County Landfill	No Indicators of Stress Observed Even Though Adjacent to Polk Parkway and Landfill, Note That Not Visited in 2018	Plains	No	-81.835875	28.014375
SWFWMD	SW-AE	SW-AE	CRUSA T9	No indicators of stress observed, completely surrounded by orange grove, note that site visit was not conducted in 2018	Plains	No	-81.795016	27.963582

SWFWMD	SW-AI	SW-AI	W of Lake Weohyakapka and Tiger Creek	Little Wetland Vegetation, Dry Even Though Nearby Wetlands Holding Water and Recent Heavy Rain	Ridge	Yes	-81.463245	27.812075
SWFWMD	SW-AK	SW-AK	On Lake Wales Ridge SW of Lake Pierce	Relocated to a Similar Marsh (Assumed Similar Condition) Because of Access Issues (Fenced Private Property, Assessment Performed at Similar Marsh Behind Lake Pierce Ranchettes Park Off Fast Trot Trail, Not the Best Marsh But No Signs of Stress Observed	Ridge	Yes	-81.552821	27.951547
SWFWMD	SW-AL	SW-AL	On Lake Wales Ridge SW of Lake Pierce	Water Levels a Little Low Because of Dry Summer, No Signs of Stress Observed	Ridge	Yes	-81.540492	27.942996
SWFWMD	SW-AN	SW-AN	N Lake Pierce		Ridge	Yes	-81.518390	28.028997
SWFWMD	SW-AO	SW-AO	E of US 17/US 92	Not a Very Nice Wetland (Bad Neighborhood, Lots of trash), But No Signs of Stress Observed	Ridge	Yes	-81.598922	28.143506
SWFWMD	SW-AQ	SW-AQ	Along Loughman Road (CR 54)		Ridge	Yes	-81.605705	28.247007
SWFWMD	SW-AR	SW-AR	S of I-4 Loughman Road Interchange		Ridge	Yes	-81.618437	28.248014
SWFWMD	SW-AS	SW-AS	Along Loughman Road		Ridge	Yes	-81.613216	28.251085
SWFWMD	SW-AT3	SW-AT3	S of Loughman Road		Ridge	Yes	-81.636164	28.255501
SWFWMD	SW-CC	SW-CC	Hilochee	Did Not Get New Photos Since Wetland Completely Surrounded by Blackberry Due to Lack of Fire, Former DMIT Site But Moved Because I-4 Construction Took Out 1/3 of Wetland on S Side	Plains	No	-81.739907	28.185078
SWFWMD	SW-D1	SW-D1	Little Lake Dinner Wetland		Plains	No	-81.790673	27.998556
SWFWMD	SW-EE	SW-EE	NERUSA - Pamplin Site		Ridge	No	-81.633575	28.246105
SWFWMD	SW-F1	SW-F1	Dick's Bros. Wetland	Nice Marsh, No Signs of Stress Observed	Ridge	No	-81.629312	28.062028
SWFWMD	SW-FF	SW-FF	NERUSA - Loma Linda Well		Ridge	No	-81.608767	28.238525
SWFWMD	SW-GG	SW-GG	Standard Mine	Nice Marsh, No Signs of Stress Observed	Ridge	No	-81.563668	28.215180
SWFWMD	SW-H1A	SW-H1A	Tiger Creek Preserve - TNC		Ridge	No	-81.483670	27.824210
SWFWMD	SW-LE	SW-LE	Cypress Creek #199, W17 Sentry Wetland	No Signs of Stress Observed, Has Stabilized	Plains	No	-82.394478	28.286128
SWFWMD	SW-LK	SW-LK	Green Swamp #5, #302	Not Stressed	Plains	No	-82.018658	28.368859
SWFWMD	SW-N7	SW-N7	Eagle Lake		Ridge	No	-81.76589328	27.98615575
SWFWMD	SW-N8	SW-N8	Lake McLeod		Ridge	No	-81.75336202	27.96798734
SWFWMD	SW-QL	SW-QL	Lake Walker		Ridge	Yes	-81.717885	27.853656
SWFWMD	SW-RR	SW-RR	Lake Wales Ridge State Forest		Plains	No	-81.470358	27.780032

SWFWMD	SW-UU	SW-UU	Trout Lake	Diverse Wetland Vegetation, No Signs of Stress	Ridge	No	-81.508392	27.653502

Appendix F:

Wetlands Risk Assessment Methodology

1.0 INTRODUCTION

The EM working group was tasked with determining the current stress status of primarily groundwater-dominated wetlands and lakes with respect to hydrologic stress and to develop tools to evaluate modeled future wetland conditions within the CFWI Planning Area. This Appendix describes the methods used to determine the probability that groundwater-dominated wetlands in Ridge or Plains settings within the CFWI Planning Area might change stress status as a result of changes in future hydrologic conditions as predicted by ECFTXv2.0 model. As defined in the report, groundwater-dominated wetlands are those wetlands whose water budget is largely driven by the exchange (both inflow and outflow) of groundwater due to their connectivity to an aquifer. Groundwater-dominated wetlands are mostly isolated, but also include headwater wetlands and seasonally inundated wetland strands that would be defined under regulatory rules as “connected wetlands.” The changes in hydrologic conditions represent changes in groundwater levels as a result of future changes in groundwater withdrawals. A change of wetland stress status can result from changing hydrologic conditions that allow a Stressed wetland to become Not Stressed, or (more commonly) changing hydrologic conditions that cause a Not Stressed wetland to become Stressed.

2.0 HYDROLOGIC INDEX DEVELOPMENT FOR PREDICTION OF WETLAND STRESS

In the analyses in support of the 2015 and 2020 CFWI RWSPs (CFWI EMT 2013, 2020), the EM group demonstrated that the probability of hydrologic stress occurring in wetlands could be related to a hydrologic index, θ, which is defined as:

$$\theta = ERE - P80 \qquad \ldots\ldots\ldots\ldots\ldots\ldots(1)$$

Where:

ERE = Wetland Edge Reference Elevation (ft NAVD 88); and

P80 = The water elevation that is exceeded 80 percent of the time (ft NAVD 88).

As described in Section 1.1. of the report, primarily groundwater-dominated wetlands were classified into three classes, based on the types of information available at each site, as shown in **Table F-1**.

Table F-1. Summary of wetland classifications.

Wetland Class	Data Class Characteristics		
	Wetland Type	Current Stress Condition	Water Levels
Class 1	Known	Known	Known
Class 2	Known	Known	Unknown
Class 3	Known	Unknown	Unknown

As described in Section 3 of the report, the EM group selected 51 Class 1 wetlands for inclusion in the analysis dataset. All of these sites were recently evaluated for stress status and had fairly complete records of water level data to calculate the P80 water elevation based on water level monitoring data for the period 2015 through 2022. This range of years was selected to optimize for the smallest standard deviation across most wetlands, for the greatest number of years, with a minimum of six years. Primarily groundwater-dominated wetlands and lakes in Plains and Ridge physiographic regions were evaluated separately, since wetland hydrologic conditions in these systems are typically different as a result of differences in underlying soils, geology, physiography, typical depths, and other factors. Wetland reference edge elevations (ERE) were available for all of the Class 1 wetlands.

The total fraction of Not Stressed and Stressed wetland θ values is calculated similarly.

$$F_u = \left(\frac{N_u}{N_u+N_s}\right) \times 100\% \qquad (2)$$

$$F_s = \left(\frac{N_s}{N_u+N_s}\right) \times 100\% \qquad (3)$$

Where:

N_u	=	Number of Not Stressed wetland values of θ
N_s	=	Number of Stressed Wetland values of θ
F_u	=	The total fraction of Not Stressed wetland θ values
F_s	=	The total fraction of Stressed wetland θ values

It was shown that the θ value distributions met the assumption of normal distribution using the Shapiro-Wilk Normality Test (**Table F-2**). The Shapiro-Wilk Normality Test tests the hypothesis that the data are normally distributed. The null-hypothesis is that the data are normally distributed, and the hypothesis is rejected at a chosen confidence level, $1 - \alpha$, if the p-value returned by the test is less than α. All candidate periods of record were unable to reject the null hypothesis at a 90 percent confidence level (p-value < 0.1 for 7 < n < 5000) for the Stressed and Not Stressed Plains and Ridge wetlands.

Table F-2 Summary of Shapiro-Wilk Normality Test for the Class 1 wetlands dataset.

p-Values	Plains Wetlands		Ridge Wetlands	
Start Year	Not Stressed	Stressed	Not Stressed	Stressed
n=	21	6	19	5
2015	0.309	0.209	0.634	0.511

After the optimized period of record was selected, we evaluated the distribution of the θ values; and individually reviewed each wetland, with the EM group wetland scientists, that was beyond two standard deviations from the group mean. In general, longer time series will yield more reliable P80 water level statistics, but our ability to use long records was limited by two factors: (1) the longer the record, the more likely that it would show a trend in water levels due to various man-made influences on the surface water and groundwater systems, and 2) for longer desired record lengths, there were fewer wetland sites that have water level data with a long enough record, which reduced the number of wetlands available to provide P80 water level values to be used for fitting a distribution to the resulting hydrologic index, θ, values; this is problematic because fitted distributions based on fewer observations are inherently subject to greater error in fitting the distribution.

Updates to the scripts (WetlandStressSFWMDsYr.R, WetlandStressSWFWMDsYr.R, WetlandStressSJRWMDsYr.R) adapted the script to perform the same functionality, as found in the previous analyses (CFWI EMT 2013, 2020) reiterated for every year-range permutation within 2006 and 2022, with a minimum of 6 consecutive years. The mentioned changes, allowed for the development a more efficient approach to identify the optimal period of record; a new R script "Optimal_RNG_finder.R" was developed. Note that the R code/scripts used for our analyses are included at the end of this appendix. The mentioned script references the number of years, number of observations, Shapiro-Wilk Normality Test results, and standard deviations, calculated from the water level observations (NAVD 88) in each permutation and for each wetland. Consequently, the mentioned values are referenced to rank the year-range permutations for each wetland. Primarily by ascending standard deviation; secondarily, descending total number of years; tertiary, descending number of observations; and quaternary, descending Shapiro-Wilk Normality Test results, such that the "optimal" year-ranges for each wetland are closer to the first position. The sum of rankings for each year-range permutation, across all wetlands, is then referenced to evaluate the "optimal" year-range, with the smallest sum representing the ideal target.

For the "optimal" period of record (2015 – 2022) the Shapiro-Wilk Normality Test results for each wetland group (Ridge Stressed, Ridge Not Stressed, Plain Stressed, Plain Not Stressed) was calculated (**Table F-2**). Once the period of record was chosen, the individual wetland theta (θ) values were compared against the corresponding wetland group mean (Ridge Stressed, Ridge Not Stressed, Plain Stressed, Plain Not Stressed); when the theta (θ) values for any of the wetlands exceeded two standard deviations, those wetlands were reviewed and considered for exclusion based on the professional judgement from the EM wetland scientist involved.

After assessing all these factors, a period of 2015 through 2022 was selected as the best timeframe for use in calculating hydrologic index values for use in this analysis. As shown in **Table F-2,** the four classes of wetlands all pass the Shapiro-Wilk Normality Test for this period of record. Therefore, it is possible to fit normal distributions to the hydrologic index, θ, values for each wetland class, and to use the resulting fitted normal distributions in developing assessments of wetland stress risk for altered water levels caused by groundwater pumping.

For each wetland type, the statistical distribution of the hydrologic index, θ, was assessed separately for Stressed and Not Stressed wetlands. The number of wetlands in each subclass and the calculated mean and standard deviation of the θ values in each subclass are summarized in **Table F-3**.

Table F-3. Summary of Class 1 Wetlands Hydrologic Index statistics.

Wetland Type	Not Stressed Symbol	Stressed Symbol	Statistical Attribute	Not Stressed Value	Stressed Value
Plains Wetlands	N_u	N_s	Number of wetlands	21	6
	$\bar{\theta}_u$	$\bar{\theta}_s$	Mean value of θ	2.36 ft	3.42 ft
	${s_\theta}^2{}_u$	${s_\theta}^2{}_s$	Standard deviation of θ	0.883 ft	1.59 ft
Ridge Wetlands	N_u	N_s	Number of wetlands	19	5

Wetland Type	Not Stressed Symbol	Stressed Symbol	Statistical Attribute	Not Stressed Value	Stressed Value
	$\bar{\theta}_u$	$\bar{\theta}_s$	Mean value of θ	2.73 ft	5.97 ft
	${s_\theta}^2{}_u$	${s_\theta}^2{}_s$	Standard deviation of θ	1.43 ft	3.11 ft

The probability density values for Not Stressed and Stressed wetlands at different values of θ were calculated as follows:

$$p_u(\theta) = N\left(\bar{\theta}_u, {s_\theta}^2{}_u, \theta_u\right) \qquad \text{.......................................}(\mathbf{4})$$

$$p_s(\theta) = N\left(\bar{\theta}_s, {s_\theta}^2{}_s, \theta_s\right) \qquad \text{.......................................}(\mathbf{5})$$

Where:

$p_u(\theta)$	=	The probability density of Not Stressed wetlands at a wetland hydrologic index value of θ (ft.)
$p_s(\theta)$	=	The probability density of Stressed wetlands at a value of θ
$N(\bar{\theta}, {s_\theta}^2, \theta)$	=	The normal distribution probability density function based on the distribution parameters listed below
$\bar{\theta}$	=	The average of the observed θ values for the selected wetland sub-sample (i.e., either the Not Stressed or the Stressed sub-sample, as appropriate) (ft.)
${s_\theta}^2$	=	The variance of the observed θ values for the selected wetland sub-sample
θ	=	The value of the wetland hydrologic index value at which the probability density is to be calculated (ft.)

Data from the 342 Class 2 wetlands (described in Section 4 of the report) were used as a random sample of the relative frequency of occurrence of Not Stressed and Stressed wetland sites. Field assessments of all Class 2 wetlands were conducted for this analysis. Similar to previous analysis (CFWI EMT 2023, 2020), Plains wetland systems that were considered as “significantly hydrologically altered” (SHA) were excluded from this analysis. The relative occurrence of Stressed and Not Stressed wetlands in the Class 2 wetlands dataset for the CFWI Planning area is summarized in **Table F-4**.

Table F-4. Summary of Stressed and Not Stressed frequency of wetlands in Class 2 wetlands dataset.

	Not Stressed		Stressed	
Wetland Type	**Count**	F_u	**Count**	F_s
Plains (non-SHA)	151	79.5%	39	20.5%
Ridge (All)	115	75.7%	37	24.3%

3.0 DEVELOPMENT OF STRESS PROBABILITY FUNCTIONS FOR WETLANDS WITH KNOWN INITIAL CONDITIONS

A program developed in the R programming language: ZetaCalcIntegrals_EMT2024.R, was used to implement the following equations and methods. References to equation numbers are included in the comments of this program's source code located at the end of this appendix. Additional scripts used to preprocess data for the program may be found in SharePoint via https://swfwmd.sharepoint.com/sites/cfwiemto365.

The probability density functions for the Not Stressed and Stressed wetlands (**Figures F-1** and **F-2**) each represent a fraction (F_u and F_s, respectively), of the total probability density function for all wetlands. The contribution of each sub-set of wetlands (Not Stressed and Stressed) to the total probability density function for all wetlands can be calculated as:

$$p'_u(\theta) = F_u \times p_u(\theta) \quad \text{.................................(6)}$$

$$p'_s(\theta) = F_s \times p_s(\theta) \quad \text{.................................(7)}$$

Where:

$p'_u(\theta)$	=	The population-weighted contribution of Not Stressed wetlands to the total population probability density of all wetlands at a wetland hydrologic index value of θ (ft.)
$p'_s(\theta)$	=	The population-weighted contribution of Stressed wetlands to the total population probability density of all wetlands at a wetland hydrologic index value of θ (ft.)
Other terms	=	As previously defined

The total population probability density function of all wetlands in the sample can be calculated from **Equations 6** and **7** as:

$$p'_{all}(\theta) = p'_u(\theta) + p'_s(\theta) \quad \text{...............................(8)}$$

Where:

$p'_{all}(\theta)$	=	The total population probability density of all wetlands in the sample evaluated at a wetland hydrologic index value of θ (ft.)
Other terms	=	As previously defined

For any randomly selected wetland at a given value of θ, the probability that the wetland will have a hydrologic index value of θ, and the probability that the wetland will be stressed is the ratio of the population density of Stressed wetlands to the population density of all wetlands. Similarly, the probability that any randomly selected wetland will be Not Stressed at a given value of θ is the ratio of the population density of Not Stressed wetlands to the population density of all wetlands.

$$\Psi_u(\theta) = \frac{p_u'(\theta)}{p_{all}'(\theta)} = \frac{p_u'(\theta)}{\{p_u'(\theta) + p_s'(\theta)\}} \qquad (9)$$

$$\Psi_s(\theta) = \frac{p_s'(\theta)}{p_{all}'(\theta)} = \frac{p_s'(\theta)}{\{p_u'(\theta) + p_s'(\theta)\}} \qquad (10)$$

$$\Psi_u(\theta) = 1 - \Psi_s(\theta) \qquad (11)$$

Where:

$\Psi_u(\theta)$	=	The probability that any randomly selected wetland will be Not Stressed at a given value of θ (dimensionless)
$\Psi_s(\theta)$	=	The probability that any randomly selected wetland will be Stressed at a given value of θ (dimensionless)
Other terms	=	As previously defined

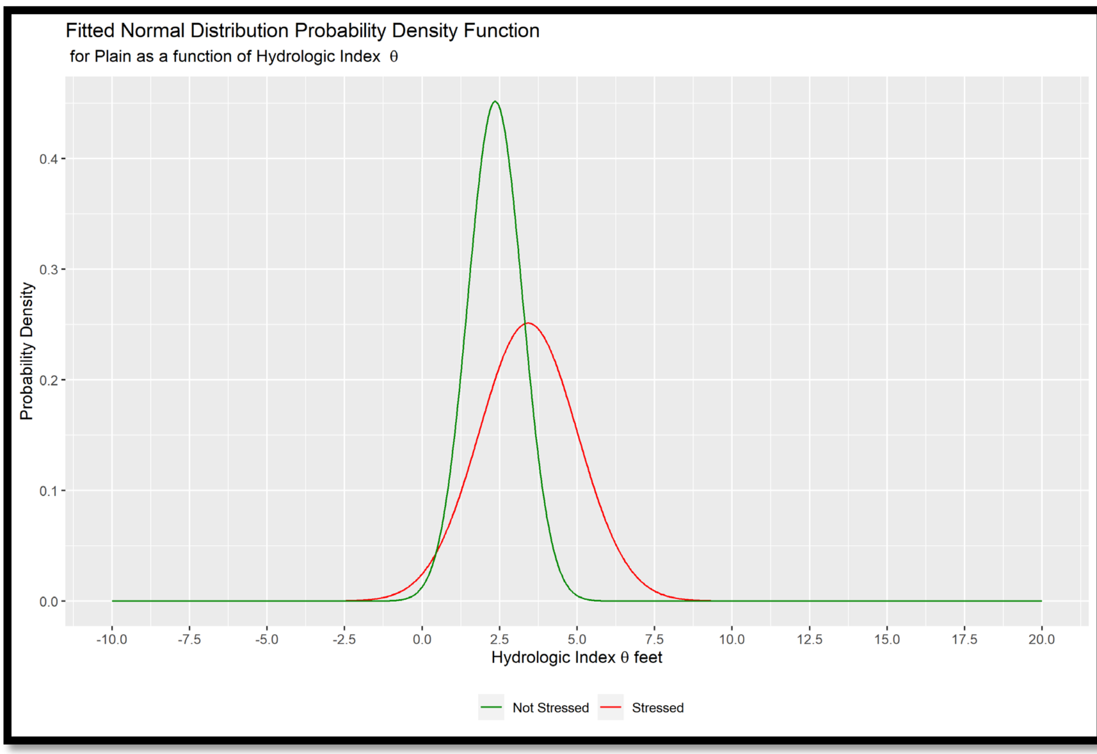

Figure F-1. Plains wetlands probability density functions.

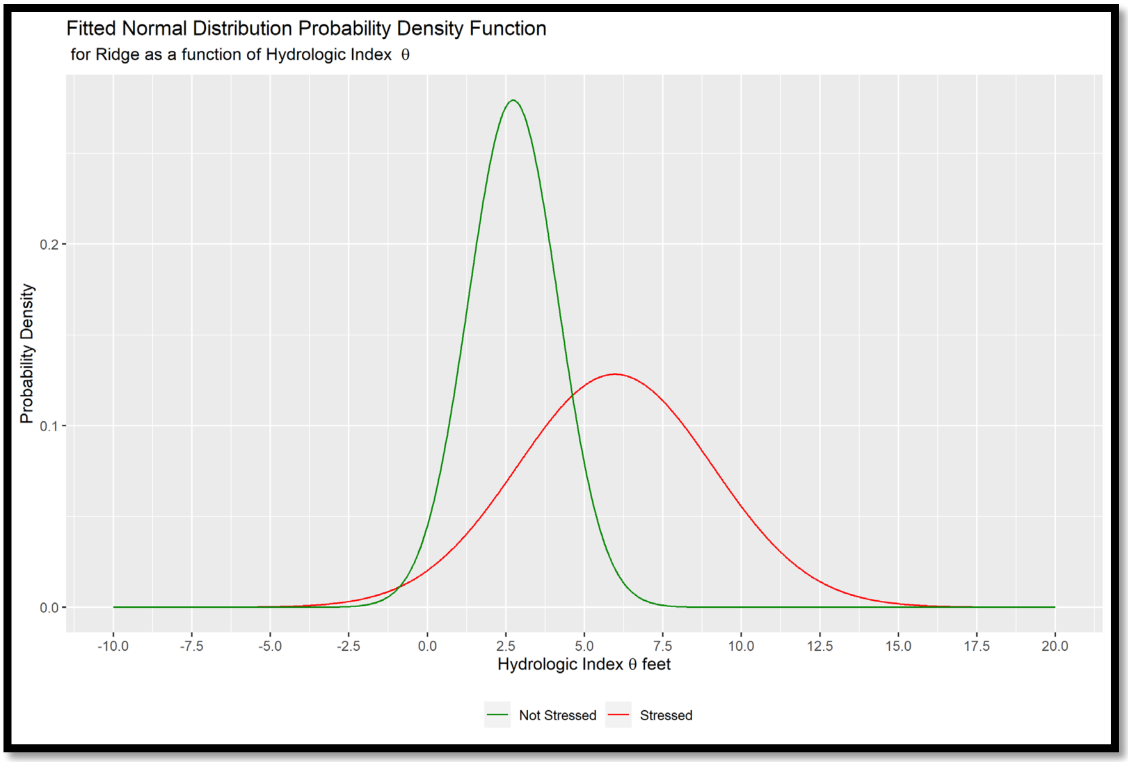

Figure F-2. Ridge wetlands probability density functions.

The resulting stress probability functions (Ψ functions) for Plains are shown in **Figure F-3**, and the Ψ functions for Ridge wetlands are shown in **Figure F-4**. Note that the Ψ functions are not probability density functions and $\int_{-\infty}^{\infty} \psi(\theta)\, d\theta \neq 1$. Unlike probability density functions, the area under the probability curve is not equal to one ($\int_{-\infty}^{\infty} \Psi(\theta)\, d\theta \neq 1$).

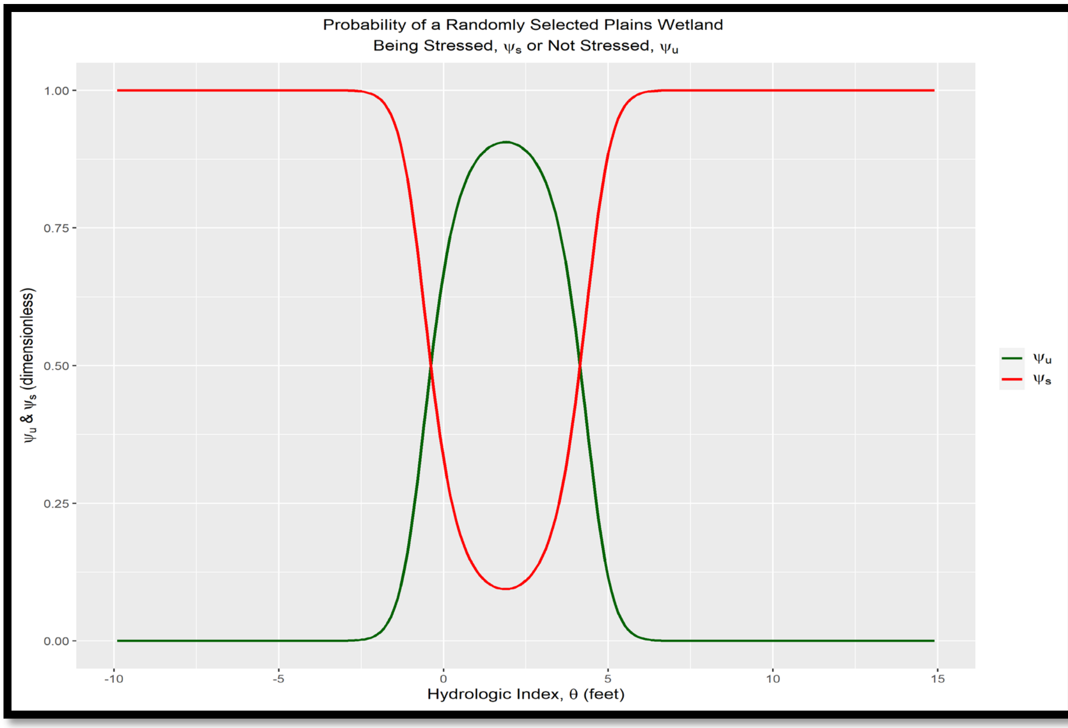

Figure F-3. Probability of a randomly-selected Plains wetland being Stressed (ψ_s) or Not Stressed (ψ_u) as a function of observed Hydrologic Index (θ) value.

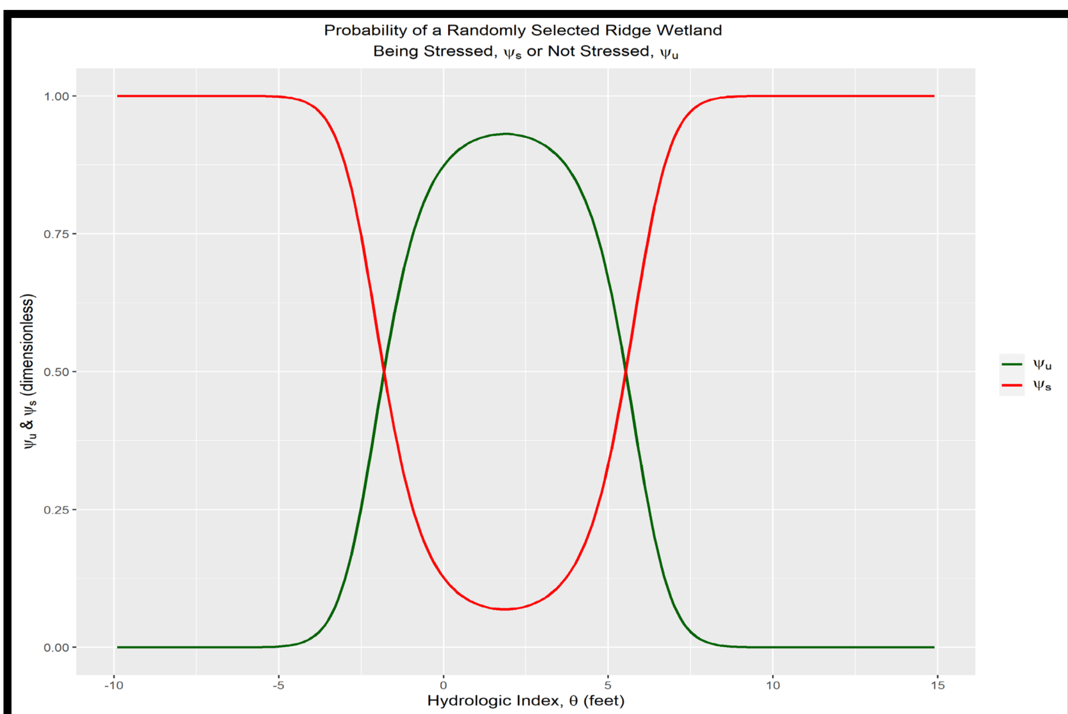

Figure F-4. Probability of a randomly-selected Ridge wetland Being Stressed ($\boldsymbol{\Psi_s}$) or Not Stressed ($\boldsymbol{\Psi_u}$) as a function of observed Hydrologic Index ($\boldsymbol{\theta}$) value.

The Ψ_u and Ψ_s functions represent the probabilities of a randomly selected wetland being found to be Not Stressed or Stressed, respectively, at a specified value of the wetland Hydrologic Index, θ. It can be seen that the range of hydrologic index values at which a Ridge wetland is more likely to be Not Stressed than Stressed is much broader than the corresponding range for Plains wetlands. This is thought to be a product of the natural hydrology of these two physiographic regions; natural water levels vary much more in Ridge settings than in the Plains settings, and the native wetland systems are adapted to these conditions. While the Ψ_u and Ψ_s probability functions provide useful information, we are frequently more interested in a different probability – the probability that a wetland of known initial stress condition and known initial wetland hydrologic index value, θ, will change its stress status when the wetland hydrologic index is altered to some different value of θ.

Using the data from **Tables F-3** and **F-4**, a series of curves was developed showing the probability of Not Stressed Plains wetlands becoming Stressed due to a change in the hydrologic index, θ. The probability of stress is shown as a function of the initial value of θ and of Δθ, the amount of future change in the value of θ. The function for probability of inducing stress in an initially Not Stressed wetland is represented as $\zeta_{u\rightarrow s}$ shown in **Figures F-5** through **F-8** Similarly, a probability function represented as $\zeta_{s\rightarrow u}$ produces the curves in **Figures F-9** through **F-12** showing the probability of (eventually) inducing recovery of an initially hydrologically Stressed wetland to a Not Stressed condition, for negative and positive values of Δθ, respectively.

The probabilities of a change in the wetland stress condition as a result of a change of wetland hydrologic index from an initial value of θ_1 to a final value of θ_2 is represented by the functions $\zeta_{u\rightarrow s}\ (\theta_1, \theta_2)$ for adverse change from an Not Stressed to a Stressed condition, and $\zeta_{s\rightarrow u}(\theta_1, \theta_2)$ for a beneficial change from a Stressed condition to a Not Stressed condition. Changes in $\zeta_{u\rightarrow s}\ (\theta_1, \theta_2)$ and $\zeta_{s\rightarrow u}(\theta_1, \theta_2)$ are caused by an imposed change in water levels that cause a change of the hydrologic index value from θ_1 to θ_2.

A corresponding change of stress probability from:

$$\Psi_u(\theta_1)\ to\ \Psi_u(\theta_2) \qquad \text{............................. (12)}$$

and from:

$$\Psi_s(\theta_1)\ to\ \Psi_s(\theta_2) \qquad \text{............................. (13)}$$

The $\zeta_{u\rightarrow s}\ (\theta_1, \theta_2)$ and $\zeta_{s\rightarrow u}(\theta_1, \theta_2)$ functions are discontinuous. As discussed further below, this means that the appropriate equations to use for calculation of the $\zeta_{u\rightarrow s}\ (\theta_1, \theta_2)$ function varies depending on the initial and final values of $\Psi_u(\theta_1)$ and $\Psi_u(\theta_2)$. Similarly, the appropriate equations to use for calculation of the $\zeta_{s\rightarrow u}(\theta_1, \theta_2)$ function varies depending on the initial and final values of $\Psi_s(\theta_1)$ and $\Psi_s(\theta_2)$.

Consider the case of a Not Stressed wetland that is subjected to a change in the wetland hydrologic index, from an initial value of θ_1 to a final value of θ_2. The corresponding probabilities of a wetland being Not Stressed under these conditions are $\Psi_u(\theta_1)$ and $\Psi_u(\theta_2)$, respectively.

If $\Psi_u(\theta_1) > \Psi_u(\theta_2)$, the wetland has been moved to a condition that is less favorable for occurrence of Not Stressed wetlands, and we would, therefore, expect some risk of the wetland experiencing an adverse change of stress status. However, if $\Psi_u(\theta_1) \le \Psi_u(\theta_2)$, the wetland has been moved to a condition that is more favorable for occurrence of Not Stressed wetlands; since the wetland was already Not Stressed there is no reason to expect a change in stress status when it is subjected to more favorable conditions. Therefore, if $\Psi_u(\theta_1) \le \Psi_u(\theta_2)$, the probability of an adverse change of stress condition is zero.

However, if $\Psi_u(\theta_1) > \Psi_u(\theta_2)$, conditions have become less favorable for Not Stressed wetlands, and the probability of an adverse change from a Not Stressed condition to a Stressed condition is greater than zero. Also consider a case where a large population of N wetlands are found at an initial hydrologic index value of θ_1, and are subjected to a change that induces a final hydrologic index value of θ_2, such that $\Psi_u(\theta_1) > \Psi_u(\theta_2)$ so that a decrease in the fraction of Not Stressed wetlands is expected. The expected initial number of Not Stressed wetlands would be $N \times \Psi_u(\theta_1)$, and the expected final number of Not Stressed wetlands would be $N \times \Psi_u(\theta_2)$. Therefore, the number of Not Stressed wetlands that changed status to a Stressed condition would be:

$$\{[N \times \Psi_u(\theta_1)] - [N \times \Psi_u(\theta_2)]\} \quad \text{..............................(14)}$$

or

$$N \times [\Psi_u(\theta_1) - \Psi_u(\theta_2)] \quad \text{..............................(15)}$$

Therefore, the probability of any randomly selected Not Stressed wetland in this population becoming Stressed would be the number that changed from Not Stressed to Stressed condition divided by the initial number of Not Stressed wetlands in the population:

$$\{N \times [\Psi_u(\theta_1) - \Psi_u(\theta_2)]\} \,/\, N \times \Psi_u(\theta_1) \quad \text{.............................. (16)}$$

which simplifies to:

$$\left[1 - \frac{\Psi_u(\theta_2)}{\Psi_u(\theta_1)}\right] \quad \text{..............................(17)}$$

Therefore, the risk of an adverse change in wetland stress status from a Not Stressed condition to a Stressed condition can be calculated as:

If $[\Psi_u(\theta_1) \le \Psi_u(\theta_2)]$;

$$\zeta_{u\to s}\,(\theta_1, \theta_2) = 0 \quad \text{..............................(18)}$$

If $[\Psi_u(\theta_1) \ge \Psi_u(\theta_2)]$;

$$\zeta_{u\to s}\,(\theta_1, \theta_2) = \left[1 - \frac{\Psi_u(\theta_2)}{\Psi_u(\theta_1)}\right] \quad \text{..............................(19)}$$

Conversely, the probability of a beneficial change (improvement) from a Stressed condition to a Not Stressed condition can be calculated as:

If $[\Psi_s(\theta_1) \leq \Psi_s(\theta_2)]$;

$$\zeta_{s\to u}(\theta_1, \theta_2) = 0 \qquad \text{.................................(20)}$$

If $[\Psi_s(\theta_1) \geq \Psi_s(\theta_2)]$;

$$\zeta_{s\to u}(\theta_1, \theta_2) = \left[1 - \frac{\Psi_s(\theta_2)}{\Psi_s(\theta_1)}\right] \qquad \text{.................................(21)}$$

Where:

$\zeta_{u\to s}(\theta_1, \theta_2)$	=	The probability of an adverse change in wetland status from a Not Stressed to a Stressed condition, as a result of a change in the wetland hydrologic index from an initial value of θ_1 to a final value of θ_2 (dimensionless)
$\zeta_{s\to u}(\theta_1, \theta_2)$	=	The probability of a beneficial change in wetland status from a Stressed to a Not Stressed condition, as a result of a change in the wetland hydrologic index from an initial value of θ_1 to a final value of θ_2 (dimensionless)
Other terms	=	As previously defined

The application ranges of the discontinuous probability functions for the probability of inducing a change in the stress status of wetlands by changing the wetland hydrologic index value are summarized in **Table F-5**.

Table F-5. Application ranges of discontinuous functions for calculation of the probability of inducing a change in the stress status of wetlands by changing the wetland Hydrologic Index value.

	Initial vs. Final Values of $\Psi_u(\theta)$ & $\Psi_s(\theta)$	
	$\Psi_u(\theta_1) \geq \Psi_u(\theta_2)$ $\Psi_s(\theta_1) \leq \Psi_s(\theta_2)$	$\Psi_u(\theta_1) \leq \Psi_u(\theta_2)$ $\Psi_s(\theta_1) \geq \Psi_s(\theta_2)$
Probability of **Adverse** Stress Change in Initially Not Stressed Wetlands	$\zeta_{u\to s}(\theta_1, \theta_2) = \left[1 - \frac{\Psi_u(\theta_2)}{\Psi_u(\theta_1)}\right]$	$\zeta_{u\to s}(\theta_1, \theta_2) = 0$
Probability of **Beneficial** Stress Change (Recovery) in Initially Stressed Wetlands	$\zeta_{s\to u}(\theta_1, \theta_2) = 0$	$\zeta_{s\to u}(\theta_1, \theta_2) = \left[1 - \frac{\Psi_s(\theta_2)}{\Psi_s(\theta_1)}\right]$

Figure F-5 through **F-12** descriptions as they relate to **Table F-5**:

Figures F-5 and **F-6**: Probability of Adverse Stress Change in Initially Not Stressed Wetlands $\zeta_{u\to s}(\theta_1, \theta_2)$ with future water levels higher than current levels (negative values of Δθ, where $\Delta\theta = (\theta_2 - \theta_1)$);
Figures F-7 and **F-8**: Probability of Adverse Stress Change in Initially Not Stressed Wetlands $\zeta_{u\to s}(\theta_1, \theta_2)$ with future water levels lower than current levels (positive values of Δθ, where $\Delta\theta = (\theta_2 - \theta_1)$);
Figures F-9 and **F-10**: Probability of Beneficial Stress Change (Recovery) in Initially Stressed Wetlands $\zeta_{s\to u}(\theta_1, \theta_2)$ with future water levels higher than current levels (negative values of Δθ, where $\Delta\theta = (\theta_2 - \theta_1)$);

Figures F-11 and **F-12**. Probability of Beneficial Stress Change (Recovery) in Initially Stressed Wetlands $\zeta_{s \to u}\,(\theta_1, \theta_2)$ with future water levels lower than current levels (positive values of Δθ, where $\Delta\theta = (\theta_2 - \theta_1)$);

Where new conditions show potential beneficial conditions $\Psi_u(\theta_1) \leq \Psi_u(\theta_2)$: No Probability of Adverse Stress Change in Initially Not Stressed Wetlands; and

Where new conditions show potential adverse conditions $\Psi_s(\theta_1) \leq \Psi_s(\theta_2)$: No Probability of Beneficial Stress Change in Initially Stressed Wetlands.

Examples of the resulting probability functions for probability of an adverse and beneficial change in wetland status from a Not Stressed to a Stressed condition and Stressed to Not Stressed condition for multiple positive values of $\Delta\theta$, and for multiple negative values of $\Delta\theta$, where $\Delta\theta = (\theta_2 - \theta_1)$, are shown in **Figures F-5** through **F-12**.

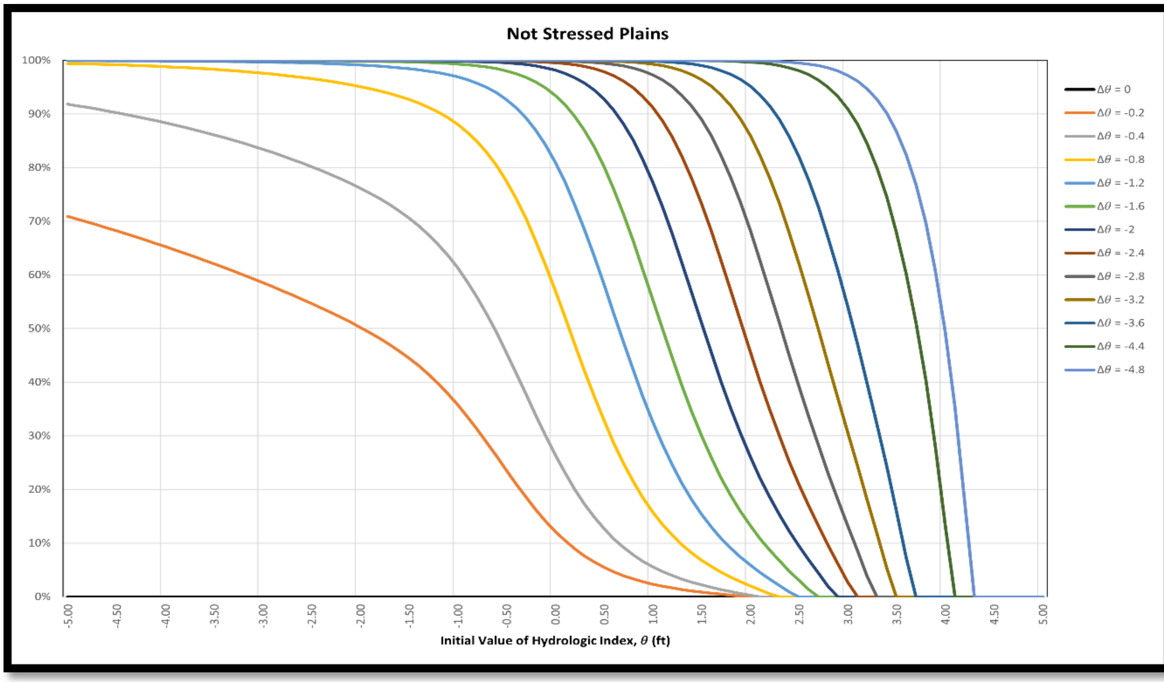

Figure F-5. Not Stressed Plains wetlands probability of becoming Stressed for multiple negative values of $\Delta\theta$.

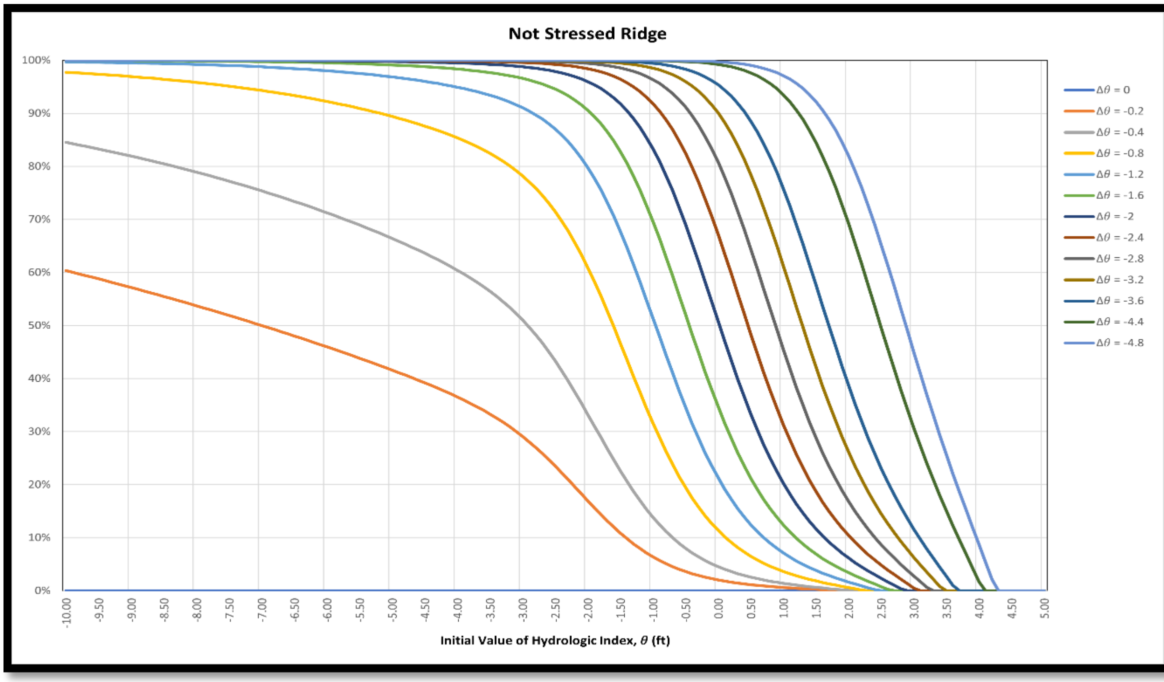

Figure F-6. Not Stressed Ridge wetlands probability of becoming Stressed for multiple negative values of $\Delta\theta$.

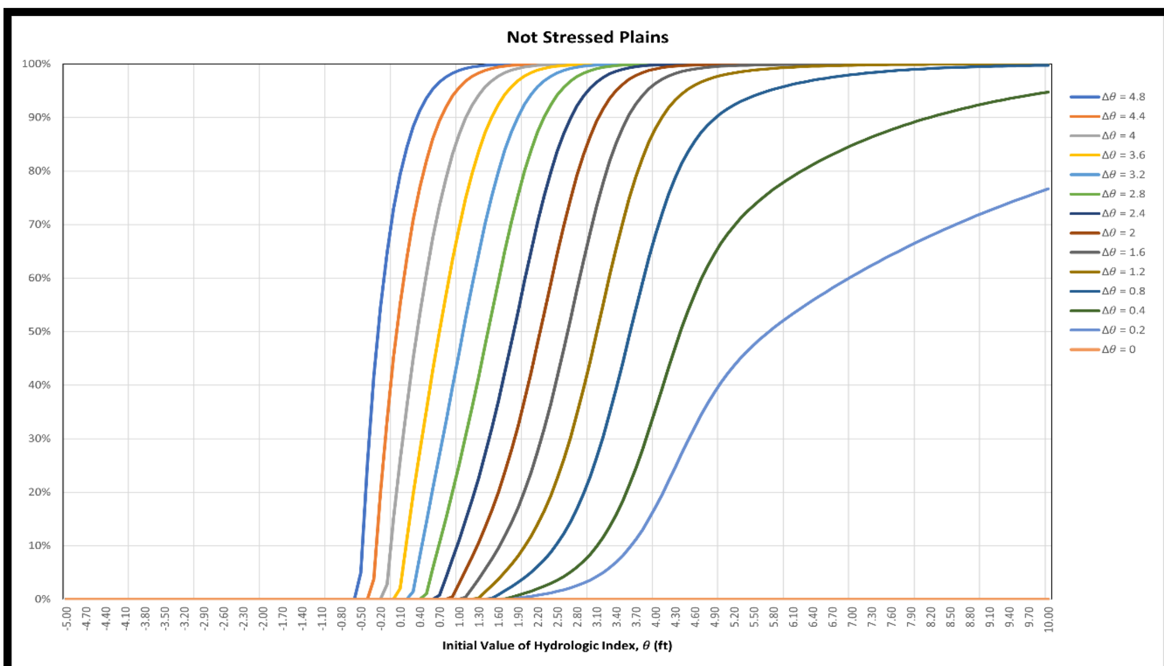

Figure F-7. Not Stressed Plains wetlands probability of becoming Stressed for multiple positive values of $\Delta\theta$.

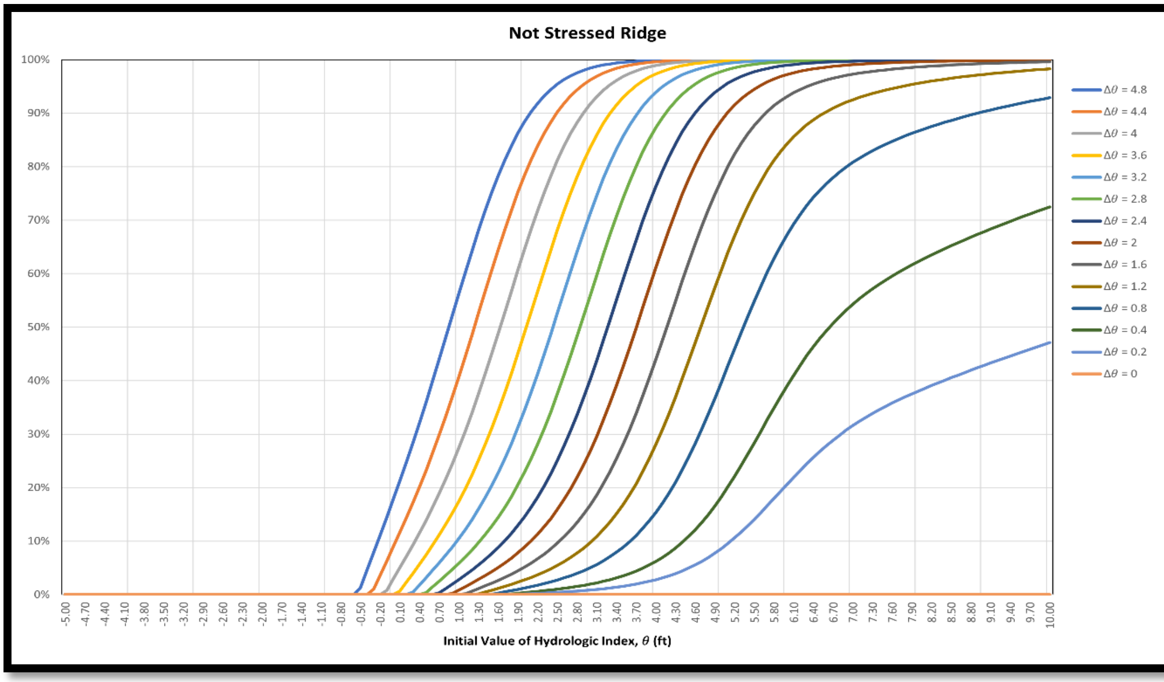

Figure F-8. Not Stressed Ridge wetlands probability of becoming Stressed for multiple positive values of $\Delta\theta$.

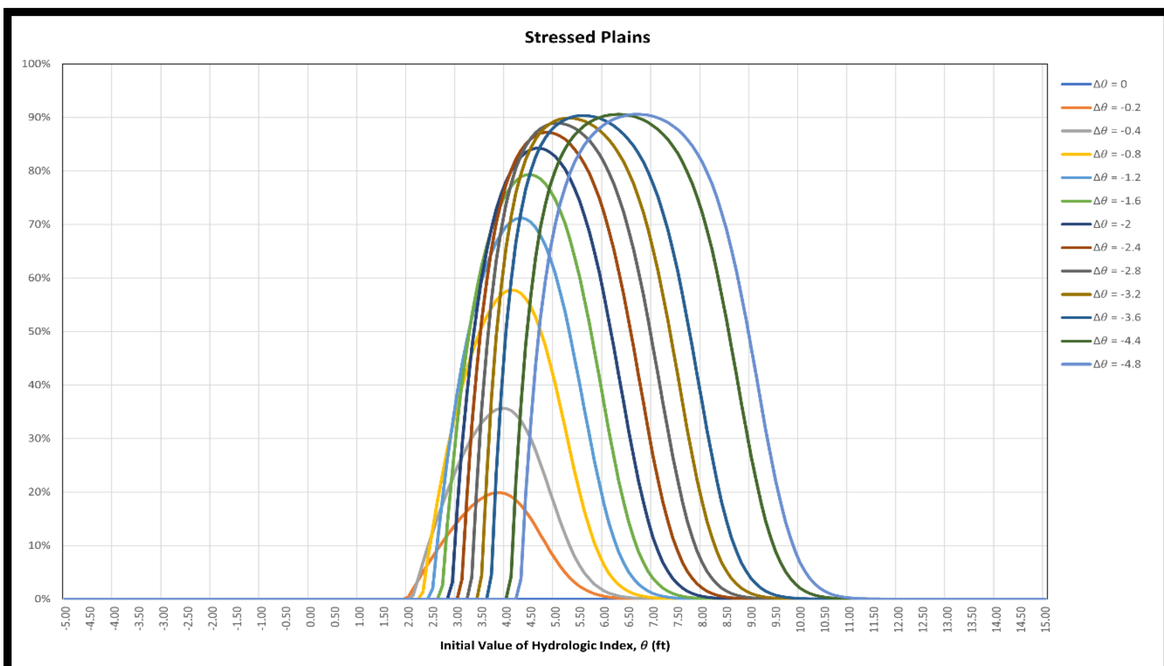

Figure F-9. Stressed Plains wetlands probability of becoming Not Stressed for multiple negative values of $\Delta\theta$.

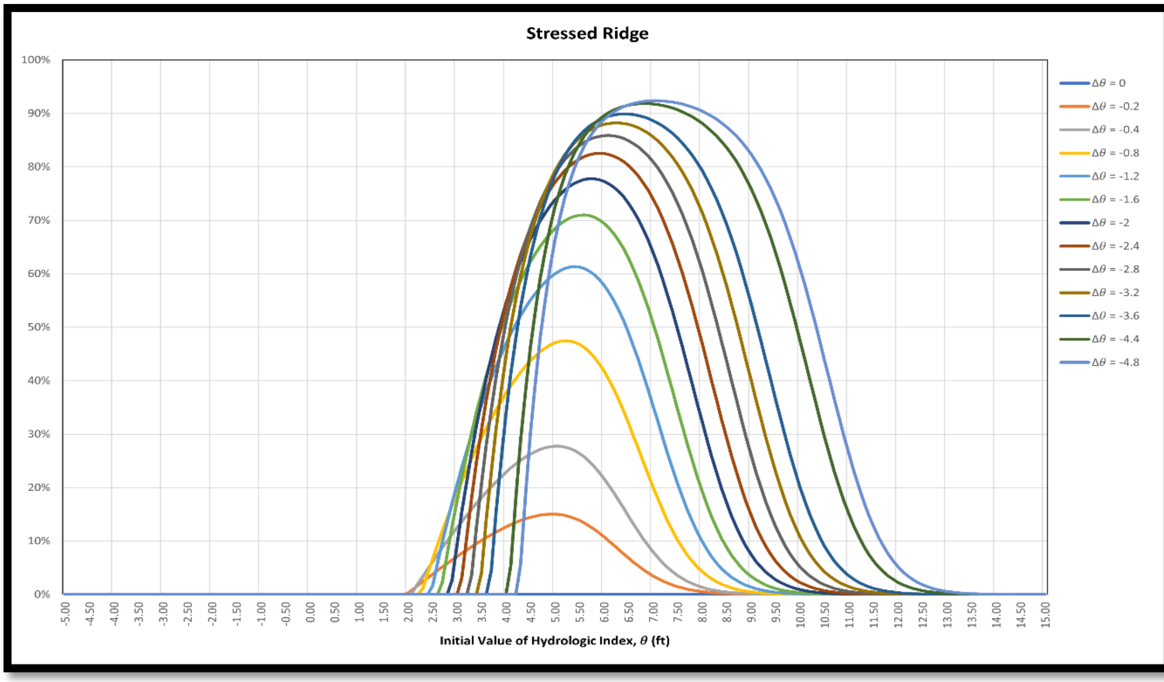

Figure F-10. Stressed Ridge wetlands probability of becoming Not Stressed for multiple negative values of $\Delta\theta$.

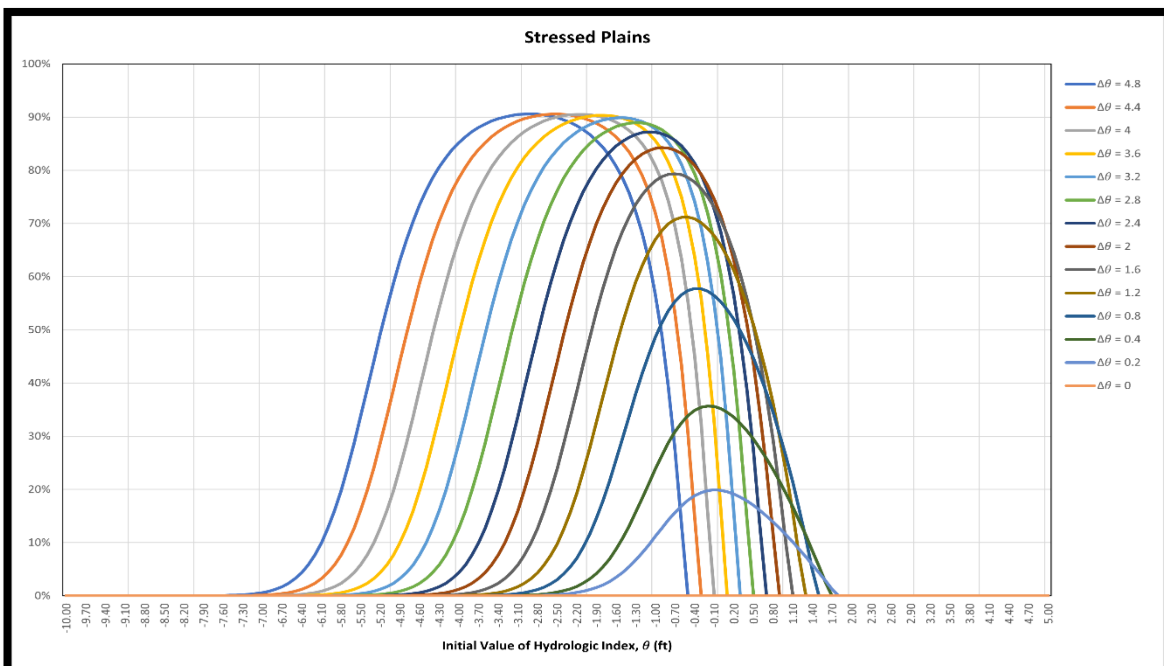

Figure F-11. Stressed Plains wetlands probability of becoming Not Stressed for multiple positive values of $\Delta\theta$.

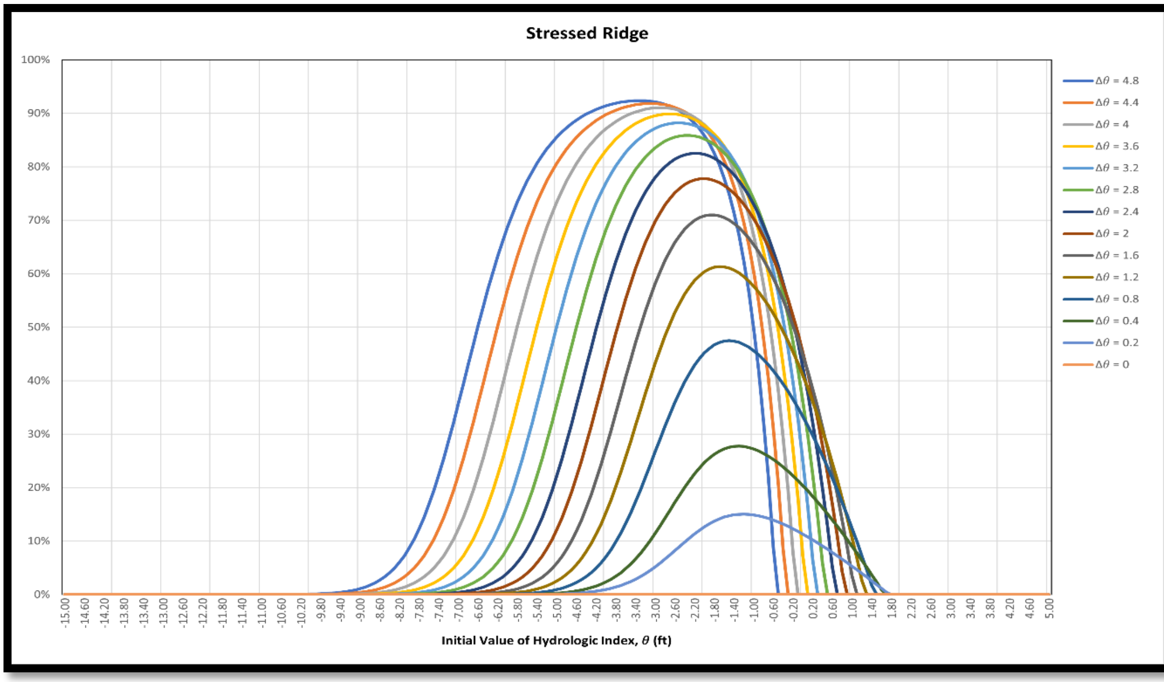

Figure F-12. Stressed Ridge wetlands probability of becoming Not Stressed for multiple positive values of $\Delta\theta$.

Note that significant probabilities of inducing a beneficial change are obtained by changing an initial θ value in a Stressed wetland from a relatively extreme high or low value towards the mean θ value that is characteristic of Not Stressed wetlands. Therefore, these benefit functions have their highest values within the range of θ values that are observed in our data set and become numerically insignificant as we extrapolate to final condition θ values ($\theta_2 = \theta_1 + \Delta\theta$) that lie outside the observed dataset.

4.0 DEVELOPMENT OF STRESS PROBABILITY FUNCTIONS FOR WETLANDS WITH UNKNOWN INITIAL CONDITIONS

As shown in the **Figures F-5** through **F-12**, the probability of inducing a stress change is strongly dependent on the initial stress status and the initial hydrologic condition (i.e., the initial θ value) of the wetland; this applies to both Plains and Ridge wetlands, and the creation of both stress and beneficial change. This dependency is problematic because we don't know these two initial condition values for most of the wetlands.

This problem can be treated statistically by calculating the population-weighted average values of $\zeta_{u\to s}$ and $\zeta_{s\to u}$, and we can estimate the density of initially Stressed and Not Stressed wetlands from our survey sample of wetlands (the Class 2 wetlands). The population-weighted average values of $\zeta_{u\to s}$ and $\zeta_{s\to u}$ are denoted as $\bar{Z}_{u\to s}$ and $\bar{Z}_{s\to u}$, respectively, and are calculated as:

$$\bar{Z}_{u\to s}(\Delta\theta) = \int_{-\infty}^{\infty} p_{u\theta}(\theta)\zeta_{u\to s}(\theta, \theta + \Delta\theta)d\theta \qquad \text{........................ (22)}$$

$$\bar{Z}_{s\to u}(\Delta\theta) = \int_{-\infty}^{\infty} p_{s\theta}(\theta)\zeta_{s\to u}(\theta, \theta + \Delta\theta)d\theta \qquad \text{........................ (23)}$$

These two functions allow us to calculate the average probability of inducing a stress change (creating stress or benefit) for any given value of $\Delta\theta$. The resulting values of $\bar{Z}_{u\to s}$ and $\bar{Z}_{s\to u}$ for Plains and Ridge wetlands are shown as functions of $\Delta\theta$ in **Figure F-13**. The following two figures were created by using ZetaCalcIntegrals_EMT2024 to produce 4 series of Zetas in a file called polynomData.csv and importing this data into Excel to create "xy" charts.

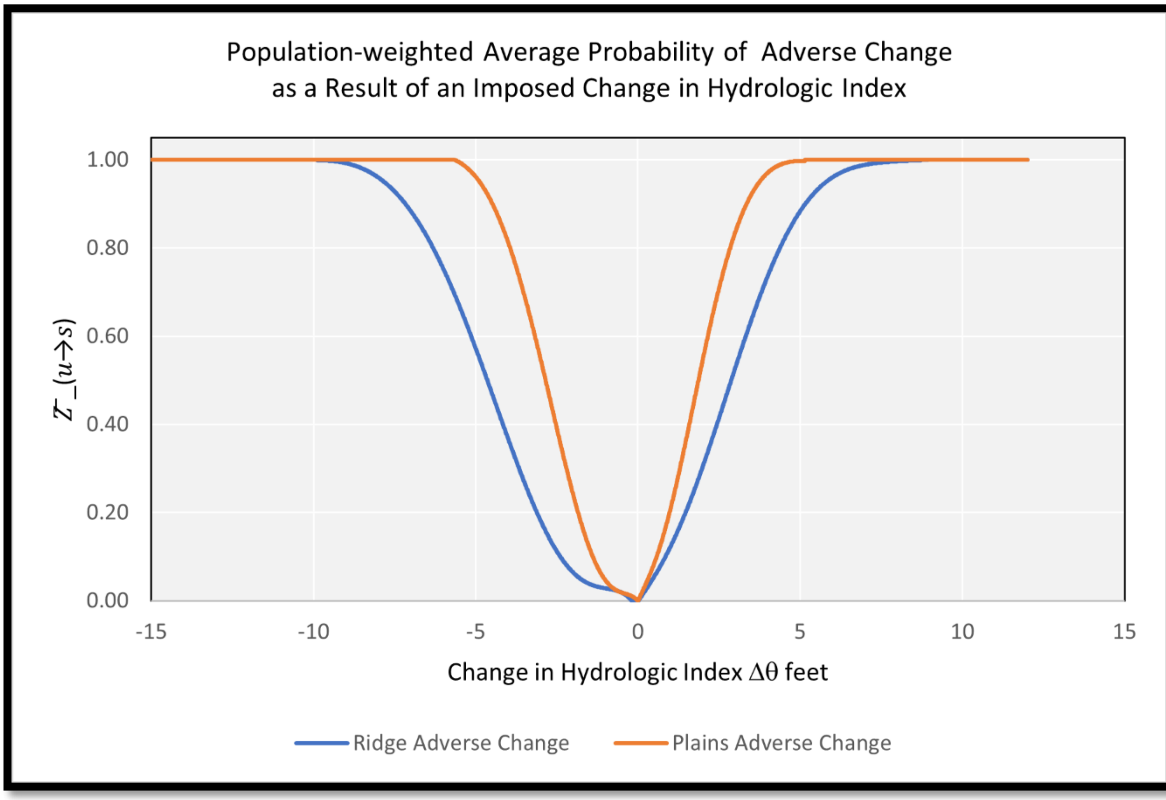

Figure F-13. Population-averaged probabilities of Not Stressed Plains and Ridge wetlands becoming Stressed, for use with wetlands where the initial condition is unknown.

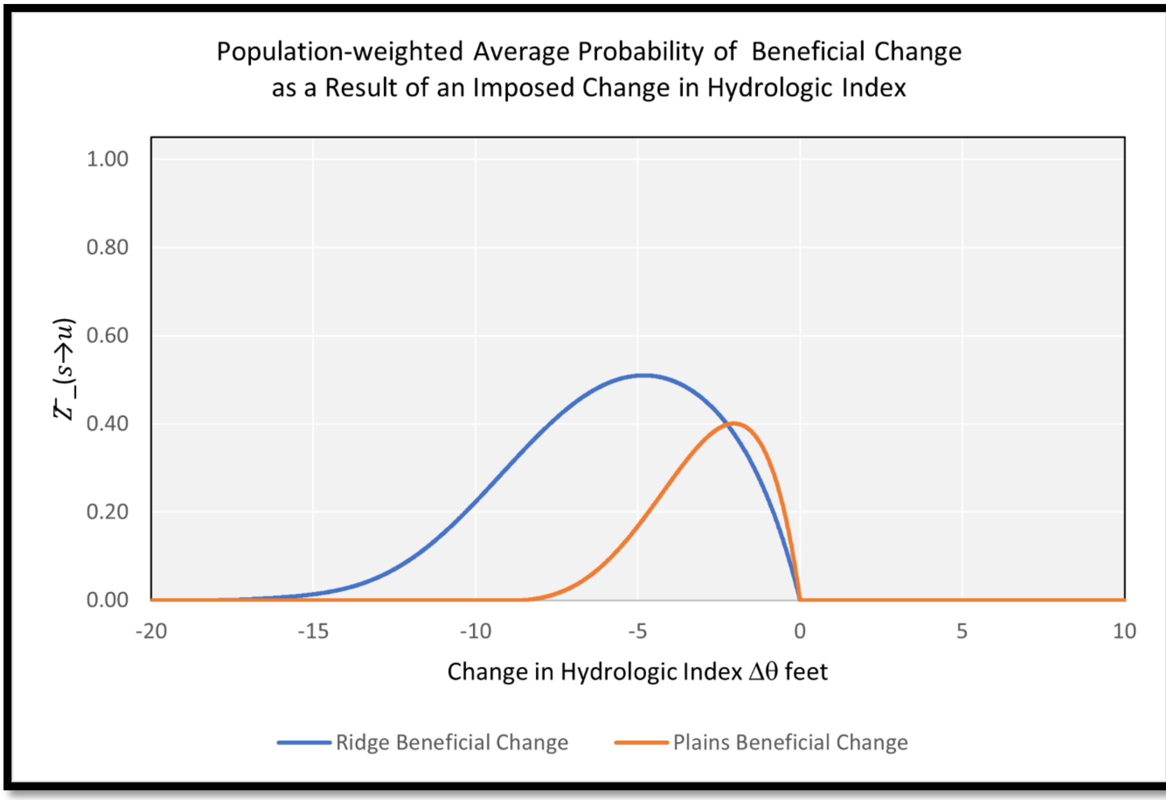

Figure F-14. Population-averaged probabilities of Stressed Plains and Ridge wetlands becoming Not Stressed, for use with wetlands where the initial condition is unknown.

5.0 PREDICTED AREAS OF WETLANDS SUBJECT TO CHANGE IN STRESS STATUS

From the of $\bar{Z}_{u\to s}$ and $\bar{Z}_{s\to u}$ functions, we can calculate a population-weighted average probability of stress change at each wetland location in each cell of the ECFTX model, based on the value of $\Delta\theta$ for that cell. The resulting predicted probability of stress status change is extremely unreliable at any individual wetland location or group of wetland locations because the actual local probabilities of stress status change are strongly dependent on the unknown initial conditions of the wetland or group of wetlands. The usefulness of this calculation is that the estimated **total** areas of wetlands that will undergo a stress status change can be calculated as:

$$A_{u\to s} = \sum_{i=1}^{n}[(\bar{Z}_{u\to s})_i \cdot (a_i)] \quad \text{........................} \quad (24)$$

$$A_{s\to u} = \sum_{i=1}^{n}[(\bar{Z}_{s\to u})_i \cdot (a_i)] \quad \text{........................} \quad (25)$$

Where:

$A_{u\to s}$ = The total area of wetlands predicted to change status from Not Stressed to Stressed

$A_{s\to u}$ = The total area of wetlands predicted to change status from Stressed to Not Stressed

i = Index value for wetland segments in individual ECFTX model cells

n = Total number if wetland segments in all ECFTX model cells

$(\bar{Z}_{u \to s})_i$ = The population-weighted value of the probability of inducing stress, calculated for wetland segment number "i" based on the predicted value of $\Delta\theta$ for that type of wetland (Plains/Ridge) in that ECFTX model cell

$(\bar{Z}_{s \to u})_i$ = The population-weighted value of the probability of inducing recovery from stress, calculated for wetland segment "i" based on the predicted value of $\Delta\theta$ for that type of wetland (Plains/Ridge) in that ECFTX model cell

a_i = The area of wetland of specified type (Plains/Ridge) for wetland segment number "i"

Area calculations can be performed by post-processing MODFLOW model results using P80headDiffProbabilites_EMT2024.R to estimate total area of groundwater-dominated wetlands that will undergo a change in stress, as well as provide some mapping products presenting areas of change in stress. Also, note that the value of each increment of wetland area subject to a predicted change in stress will likely bear only a weak statistical correlation to the actual area of wetland in that location for which stress will occur. However, so long as the errors in the incremental values of wetland area subjected to a predicted change in stress are randomly and independently distributed with a mean value of zero, the cumulative total area subject to a predicted change in stress, ($A_{u \to s}$ or $A_{s \to u}$) should have relatively small cumulative total error because all the random local increments of error will tend to cancel each other out when summed for large values of "n". This was tested using a synthetic wetland data set which matched the theoretical hydrologic index distributions, in which all the initial and final wetland hydrologic index values and stress conditions were known. The wetlands were then treated as Class 3 wetlands (i.e., as if the initial wetland hydrologic index values and stress conditions were not known). The results for the Class 3 wetlands cumulative area calculation were compared to calculation of the true cumulative area of changed wetland stress in the synthetic data set. It was found that error in the cumulative area of changed stress became small (typically less than 2 percent) once the number of model cells containing wetlands that were included in the summation exceeded 500. The ability of the method to estimate the total acreage of changed stress conditions in groundwater-dominated wetlands with reasonable accuracy depends on including a relatively large number of model cells containing wetlands in the summation. Therefore, it is not appropriate to apply the method to predict the amount of change that will occur across relatively localized areas containing Class 3 wetlands.

6.0 ECFTXV2.0 MODEL WATER LEVEL PREDICTOR VARIABLES FOR ΔΘ IN WETLANDS

The value of $\Delta\theta$ for a wetland is the change of θ from some initial condition 1 to some other future condition 2. Since θ = ERE − P80, and ERE is a constant value that remains the same for any given wetland, it follows that $\Delta\theta$ = ΔP80. In order to predict a $\Delta\theta$ value, we need to be able to predict a ΔP80 water level value for the specified wetland.

6.1 Plains Wetlands

We have previously discussed that for Plains wetlands, independent review of hydrologic conditions and review of the ECFTXv2.0 model results both lead us to a conclusion that water levels in the SAS are generally dominated more by local surface hydrology than by the influence of changes in the underlying UFA potentiometric elevation. The best predictor of long-term groundwater-induced changes in Plains wetland water levels is the predicted change in SAS water tables at the location of the wetland. Consequently, our best current predictor for $\Delta\theta$ in wetlands resulting from groundwater alterations is the ΔP80 water level from reference condition to future condition calculated for the SAS water table in ECFTXv2.0 model cells that contain Plains wetland segments.

6.2 Ridge Wetlands

It has been previously described that for Ridge wetland systems, the localized leakance heterogeneity in the ridge areas might make the potentiometric surface of the UFA a better predictor of long-term changes in Ridge wetland water levels than the SAS water table. However, not all Ridge wetland systems can be characterized this way as there exists a SAS layer in the physiographic region. For that reason, results for Ridge wetlands are best represented in the form of two alternative assessments of the future predicted areas of Stressed Ridge wetlands:

- An extreme worst case based on the assumption that all Ridge wetlands are so leaky that their P80 water levels will move on a 1:1 basis with P80 potentiometric levels in the underlying UFA; and
- A possibly under-conservative case based on the assumption that all Ridge wetland P80 water levels will move on a 1:1 basis with P80 water table levels in the underlying SAS.

Initially, it was anticipated that the first option listed above, incorporating some average scaling factor, C, would be the best option: where: $\Delta\theta = \Delta P80_{[\text{Ridge wetland}]} = C \bullet \Delta P80_{[\text{UFA}]}$ and $C < 1$.

On further consideration, it was noted that the SAS water levels used for calibration of the ECFTXv2.0 model in Ridge areas tend to be dominated by known lake levels and observations from wells and piezometers that tend to be close to wetlands or water bodies, i.e. in locations where data is most available. Because of this distribution of calibration targets, the likely calibrated leakance values in the Ridge may be dominated by water levels that are more characteristic of the areas close to lakes and wetlands, and less characteristic of the zones furthest from these features. If so, response of the SAS water levels in the ridge areas of the ECFTXv2.0 model may be a better fit to the leakier depressional areas than was originally anticipated. On this basis, we suspect that overall, the predicted future areas of Stressed wetlands in the Ridge areas, based on changes in the SAS water levels, are probably closer to reality than those based on UFA potentiometric elevations. The assumption of a universal 1:1 correspondence between wetland $\Delta\theta$ values and ΔP80 potentiometric elevations in the UFA (no scaling factor) seems likely to yield overly conservative estimates.

7.0 REFERENCES

CFWI (Central Florida Water Initiative) Environmental Measures Team (EMT). 2013. Development of Environmental Measures for Assessing Effects of Water Level Changes on Lakes and Wetlands in the Central Florida Water Initiative Area. Central Florida Water Initiative's Environmental Measures Team, Final Report, November 2013.

CFWI EMT. 2020. Assessment of Effects of Groundwater-Dominated Wetlands in the Central Florida Water Initiative Planning Area. Central Florida Water Initiative's Environmental Measures Team, Final Report, August 2020.

WetlandStress_SFWMD_EMT2024.R

```
#------------------------------------------------------------------------------
# Developed by: Kevin A. Rodberg, Science Supervisor
#                 Resource Evaluation Section, Water Supply Bureau, SFWMD
#                 (561) 682-6702
#
# January 2019
#
#   Script is provided to import spreadsheet data
#   and calculate percentile rankings and plot figures
#
# Modified by: Jose Grisales, Scientist 4, Water Supply Bureau,
#              Ground Water Technical Unit.
#              jgrisale@SFWMD.gov
#
# January 2024
#
# Script calculates P80, normality test, Yearly P80 standard deviations based on
# possible yearly range permutations.
#
# last updated:01/31/2024
#------------------------------------------------------------------------------

#--
#   package management:
#     provide automated means for first time use of script to automatically
#       install any new packages required for this code, with library calls
#       wrapped in a for loop.
#--
list.of.pkgs <-  c("readr","dplyr",
                   "ggplot2",
                   "reshape2",
                   "data.table",
                   "RODBC","stringr",
                   "nortest",
                   "zoo")

new.pkgs <- list.of.pkgs[!(list.of.pkgs %in% installed.packages()[, "Package"])]

if (length(new.pkgs)){ install.packages(new.pkgs) }
for (pkg in list.of.pkgs){ library(pkg,character.only = TRUE)}

#Hydrographs and Histograms? 1=Yes, 0=No
HydroHist=1

workdir =
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023/
  SFWMD/"

workOutdir = "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
  Update2023/Script_N_Products/Products/SFWMD_StationwiseStats/"

Station.Coordinates <- utils::read.csv(paste0(workdir,"StationCoordinates.csv"))
Station.DatumAdj <- readr::read_csv(paste0(workdir,"StationDatumAdj.csv"),
                                    skip = 6)#Be attetive of the skip
```

```
Station.DatumAdj <- as.data.frame(Station.DatumAdj[,c(1,4)])#Point and Height

stations.SFWMD <- base::merge(Station.Coordinates,Station.DatumAdj,
                              by.x="DBKEY", by.y="Point")
#JG Additions===============================================================
#Pulling the unique DBKEYS as a vector
DBK_stations.SFWMD<-stations.SFWMD%>%dplyr::distinct(DBKEY)
DBK_stations.SFWMD<-DBK_stations.SFWMD[
  !(DBK_stations.SFWMD$DBKEY %in% c('NODBKY')),]
#Reformat for SQL query string----------------------------------------------
DBK_string<-paste0("'",unlist(DBK_stations.SFWMD),"',",collapse="")
DBK_string<-str_sub(DBK_string, end = -2)
#DBHYDRO Query--------------------------------------------------------------
DBH_Channel <- odbcConnect("wrep", uid="pub", pwd="pub", believeNRows=FALSE)

SFWMD.Data_Recent <-
  sqlQuery(DBH_Channel,paste(
  "SELECT DBKEY,",
  "DAILY_DATE, VALUE, CODE",
  "FROM dmdbase.dm_daily_data",
  "WHERE DMDBASE.DM_DAILY_DATA.DBKEY IN (",
  DBK_string,")",
  "AND dmdbase.dm_daily_data.daily_date > TO_DATE ('12/31/2005', 'MM/DD/YYYY')",
  "ORDER BY  DMDBASE.DM_DAILY_DATA.DBKEY, DMDBASE.DM_DAILY_DATA.DAILY_DATE"
  )
  )

odbcClose(DBH_Channel)
#JG Additions^==============================================================
SFWMD.Data_Recent$DAILY_DATE<-as.Date(SFWMD.Data_Recent$DAILY_DATE)
# Assign NA to records with certain qualifiers
skipQualifiers = c('M', 'N', 'PT',  '?',  'U')
#Merging split Oak==========================================================
Splitoak<-data.table::fread(file =
            "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
            Update2023/SFWMD/SplitOakWaterLevels_12262023.csv"
            ,header = TRUE)

Splitoak<-Splitoak[,c(1,6)]
Splitoak<-Splitoak[!(Splitoak$`SITE30-PZ1` %in% c("Data Not Available 2")),]

Splitoak$DBKEY<-"NODBKY"
Splitoak$CODE<-NA

Splitoak<-Splitoak[,c(3,1,2,4)]
names(Splitoak)<-names(SFWMD.Data_Recent)
#Reformatting date column
Splitoak$DAILY_DATE<-as.Date(Splitoak$DAILY_DATE,format="%m/%d/%Y")

#Binding splitoak and
SFWMD.Data_Recent<-rbind(SFWMD.Data_Recent,Splitoak)

#Pivoting data to wide format so that we can average data on the same days======
```

```
SFWMD.Data_Recent_w<-as.data.table(SFWMD.Data_Recent[,-c(4)])
SFWMD.Data_Recent_w$VALUE<-as.numeric(SFWMD.Data_Recent_w$VALUE)

SFWMD.Data_Recent_w<-data.table::dcast(SFWMD.Data_Recent_w,
                        DAILY_DATE~DBKEY,
                        value.var = "VALUE",
                        fun.aggregate = mean)

SFWMD.Data_Recent_m<-data.table::melt(data=SFWMD.Data_Recent_w,
                                      na.rm = FALSE,
                                      id.vars=c("DAILY_DATE"))

SFWMD.Data_Recent_m<-SFWMD.Data_Recent_m[!is.nan(SFWMD.Data_Recent_m$value),]
SFWMD.Data_Recent_m$CODE<-NA
SFWMD.Data_Recent_m<-SFWMD.Data_Recent_m[,c(2,1,3,4)]

names(SFWMD.Data_Recent_m)=names(SFWMD.Data_Recent)

SFWMD.Data_Recent=SFWMD.Data_Recent_m
#Pulling the unique DBKEYS as a vector for loop
DBK_stations.SFWMD<-as.vector(unlist(
  SFWMD.Data_Recent%>%dplyr::distinct(DBKEY)))
#-------------------------------------------------------------------------------
#Assure continuous date range.
drange = as.data.table(seq.Date(as.Date('2006/1/1'),as.Date('2023/12/31'),by=1))
names(drange)= 'DAILY_DATE'

cat (paste0('Interpolating and imputing missing data','\n'))

AllStations_SF <- list()
for (dbk in DBK_stations.SFWMD){
  cat(paste(dbk,'\n'))

  OneStation <- SFWMD.Data_Recent[SFWMD.Data_Recent$DBKEY ==dbk,]

  OneStation<-dplyr::left_join(drange,
                               OneStation,
                               by="DAILY_DATE")

  OneStation$DBKEY<-dbk#Applied because, the join
  #leaves out the DBKEY when joining missing dates

  OneStation.Alldates<-OneStation%>%
    mutate(approx = zoo::na.approx(VALUE,
      rule=1,#rule one indicates interpolation values as NAs at the min and max.
      #rule 2, up to the min and max (of the range) are interpolated based
      #on the closest point.
      na.rm=FALSE))

  AllStations_SF[[dbk]] <- OneStation.Alldates
}

SFWMD_stations<-data.table::rbindlist(AllStations_SF)

#stations.SFWMD #Has Height
```

```
SFWMD_stations_height<-dplyr::left_join(SFWMD_stations,
                                        stations.SFWMD,
                                        by=c('DBKEY'))
# -- Next assignment statements for NGVD to NAVD88 adjustment specific to SFWMD
SFWMD_stations_height$Heightcorrected_approx<-
  SFWMD_stations_height$approx+SFWMD_stations_height$Height
#Calculating Percentile Ranks=====================================================
#Permutations---------------------------------------------------------------------
Start=2006
End=2022

Minimum_Range=5

Years_Avail<-seq(Start,End,by=1)

Start_End_permutations<-data.frame(Start=c(NA),End=c(NA))

row_pos=0
for(yr in Years_Avail){

  First_stop=yr+Minimum_Range

  End_Sequence<-c(First_stop)

  Ramaining_Yrs<-End-First_stop
  temp_stop=First_stop
  for(num in c(1:Ramaining_Yrs)){

    temp_stop=temp_stop+1

    End_Sequence<-append(End_Sequence,temp_stop)

  }

  for(num_e in End_Sequence){
    row_pos=row_pos+1

    Start_End_permutations[row_pos,]$Start<-yr
    Start_End_permutations[row_pos,]$End<-num_e
  }
}

row.names(Start_End_permutations)<-1:nrow(Start_End_permutations)
Start_End_permutations<-Start_End_permutations[Start_End_permutations$End<=End,]
#End of Permutations calc---------------------------------------------------------
SFWMD_stations_height$DAILY_DATE<-as.Date(SFWMD_stations_height$DAILY_DATE,
                                          format="%Y-%m-%d")
#Begins Permutation P80 calculations==============================================
Station_list<-as.vector(unlist(
  SFWMD_stations_height%>%dplyr::distinct(STATION)))

PivotPranks <- NULL
# Temp_SD_P80<-NULL
for (permut_row in (1:nrow(Start_End_permutations))){
```

```
  StartEnd_limits<-Start_End_permutations[permut_row,]

  start = StartEnd_limits$Start
  end = StartEnd_limits$End

  rang = paste0(start,"-",end)

  #defining what is the original format of your date
  Date_Filter<-strptime(paste0(start,'-01-01'),format="%Y-%m-%d")
  Date_Filter<-as.Date(Date_Filter,format="%Y-%m-%d")

  #defining what is the original format of your date
  Date_Filter_end<-strptime(paste0(end,'-12-31'),format="%Y-%m-%d")
  Date_Filter_end<-as.Date(Date_Filter_end,format="%Y-%m-%d")

  qStations <- SFWMD_stations_height[!is.na(
    SFWMD_stations_height$Heightcorrected_approx) &
              SFWMD_stations_height$DAILY_DATE >= Date_Filter &
                SFWMD_stations_height$DAILY_DATE <= Date_Filter_end,]

#Weibull formulation of plotting position = type 6 quantile calculation
#algorithm
  QByYr<-as.data.table(qStations)[,as.list(
                                  quantile(Heightcorrected_approx,
                                           probs=c(.2, .5),type=6)
                                 ),by=STATION]

    names(QByYr)= c("STATION","P80","P50")
    QByYr$drange <- rang

    Temp_stats_holder<-NULL
    for(stn in Station_list){

      qStations_one<-qStations[qStations$STATION %in% stn,]

    Temp_sd<-as.data.frame(
      qStations_one %>%
        dplyr::summarise(SD=stats::sd(Heightcorrected_approx,na.rm = TRUE))
    )

    Temp_sd$SD<-round(Temp_sd$SD,digits = 2)

    n_obsval<-nrow(qStations_one[!is.na(qStations_one$Heightcorrected_approx),])
    Temp_sd$n_obs<-n_obsval

    Temp_sd$STATION<-stn

    Temp_mean<-mean(qStations_one$Heightcorrected_approx,na.rm=TRUE)
    sd_3_high<-Temp_mean+(Temp_sd$SD*2.5)
    sd_3_low<-Temp_mean-(Temp_sd$SD*2.5)

    Temp_sd$Peaks<-nrow(
      qStations_one[qStations_one$Heightcorrected_approx>sd_3_high|
      qStations_one$Heightcorrected_approx<sd_3_low,])
```

```
    Temp_stats_holder<-rbind(Temp_stats_holder,Temp_sd)

    }

    QByYr<-left_join(QByYr,Temp_stats_holder,
              by="STATION")

    PivotPranks<-rbind(PivotPranks,QByYr,fill=TRUE)
}#End of loop

PivotPranks<-PivotPranks[order(STATION,SD),]

PivotPranks$Tst_WilkShapiro_pval<-888 #888 is a place holder
PivotPranks$Tst_AndDar_pval<-888 #888 is a place holder
#Saving Data==============================================================
fwrite(SFWMD_stations_height,file = paste0(workOutdir,"SFWMD_DataTable.csv"),
       row.names = FALSE)

#Graphics================================================================
Station_list<-as.vector(unlist(
  SFWMD_stations_height%>%dplyr::distinct(STATION)))

WL_Data_4graphics<-SFWMD_stations_height[!is.na(
  SFWMD_stations_height$Heightcorrected_approx),]
#Graphing and normality test loop-----------------------------------------------
for (loc in Station_list){

  WDF<-WL_Data_4graphics[WL_Data_4graphics$STATION %in% loc,]
  #graphics.off()
  for (permut_row in (1:nrow(Start_End_permutations))){

    StartEnd_limits<-Start_End_permutations[permut_row,]

    start = StartEnd_limits$Start
    end = StartEnd_limits$End

    rang = paste0(start,"_",end)
    rang_=paste0(start,"-",end)

    #defining what is the original format of your date
    Date_Filter_start<-strptime(paste0(start,'-01-01'),format="%Y-%m-%d")
    #defining what is the desired format of your date
    Date_Filter_start<-as.Date(Date_Filter_start,format="%Y-%m-%d")

    #defining what is the original format of your date
    Date_Filter_end<-strptime(paste0(end,'-12-31'),format="%Y-%m-%d")
    Date_Filter_end<-as.Date(Date_Filter_end,format="%Y-%m-%d")


    lim_WDF<-WDF[WDF$DAILY_DATE >= Date_Filter_start &
                   WDF$DAILY_DATE <= Date_Filter_end,]
#Shapiro-Wilk Test--------------------------------------------------------------
# H0: The data is "normally" distributed
# If p-values is < 0.05, then the distribution in question is "significantly"
# different from the "normal" distribution.
```

```
# p-value calculations are not trusted above 5,000 data points.

#Anderson-Darling test, slightly less sensitive than Shapiro-Wilk but
#preferred for large samples.
    if (!nrow(lim_WDF)<3){

      Anderson_Darling_test<-nortest::ad.test(lim_WDF$Heightcorrected_approx)

      PivotPranks[PivotPranks$STATION%in%loc &
                    PivotPranks$drange %in% rang_]$Tst_AndDar_pval<-
                      Anderson_Darling_test$p.value


      if (nrow(lim_WDF) > 5000){
          Shapiro_test_results<-stats::shapiro.test(sample(
          lim_WDF$Heightcorrected_approx,5000))
      }else{
        Shapiro_test_results<-stats::shapiro.test(
          lim_WDF$Heightcorrected_approx)
      }

      PivotPranks[PivotPranks$STATION%in%loc &
                    PivotPranks$drange %in% rang_]$Tst_WilkShapiro_pval<-
                      Shapiro_test_results$p.value


    temp_n=nrow(lim_WDF)
    temp_mean=mean(lim_WDF$Heightcorrected_approx)
    temp_sd=stats::sd(lim_WDF$Heightcorrected_approx)
    temp_binwidth=30

   if (HydroHist==1){
     p<-
        ggplot(lim_WDF, aes(x=Heightcorrected_approx)) +
        geom_histogram(aes(y=after_stat(density)),color="black", fill="white")+

        ggplot2::stat_function(fun = dnorm,
                               args = with(
                                 lim_WDF,c(mean=temp_mean,sd=temp_sd)),
                               col="red",linewidth=1.2,linetype=2
        )+
        labs(title=paste(loc,"-",rang))+
        theme(plot.title = element_text(hjust = 0.5))

      ggsave(paste0(workOutdir,"Histograms/",loc,"_",rang,".png"),
             width=10,height=8,units="in",dpi=444)
#Hydrographs--------------------------------------------------------------------
      p<-ggplot(lim_WDF) +

        geom_line(data=lim_WDF,aes(x=DAILY_DATE,y=Heightcorrected_approx),
                  linewidth=1,linetype="solid")+

        # geom_point(data = lim_WDF, aes(x=DAILY_DATE,y=Heightcorrected_approx),
        #            size=0.5)+
        scale_x_date (
```

```
          name= "Year",
          breaks = waiver(),
          date_breaks = "2 years",
          labels = waiver(),
          date_labels = "%Y",
          minor_breaks = waiver(),
          date_minor_breaks = waiver(),
          limits = c(min(lim_WDF$DAILY_DATE),max(lim_WDF$DAILY_DATE))
        )+

        # scale_y_continuous(
        #   name = "Heads\n(feet NAVD)",
        #   breaks = scales::breaks_extended(9),
        #   limits=c(
        #     min(lim_WDF$Heightcorrected_approx),
        #     max(lim_WDF$Heightcorrected_approx)
        #     )
        #   )+

        # scale_color_manual(values = c("black","firebrick2"))+
        # guides(col=guide_legend("Data set"))+

        labs(title=paste(loc,"-",rang),
             y = "Heads\n(feet NAVD88)")+

        # annotate("text",x=max(lim_WDF$Date),
        #          hjust = 1,
        #          y=max(c(max(lim_WDF$value),max(lim_WDF$value))),
        #          label=paste("Production Date:",Sys.Date()),
        #          size=2)+

        theme(plot.subtitle = element_text(family="mono",size=9),
              axis.text.x =  element_text(family = "sans",
                                         size = 10,angle = 33,
                                         hjust = 1, vjust = 1))

      ggsave(paste0(workOutdir,"Hydrographs/",loc,"_",rang,".png"),
             width=10,height=8,units="in",dpi=444)
      }#End of Hydrohist logical
    }#End of data size if statement
  }#End of inner loop
}#End of main loop
fwrite(PivotPranks,file = paste0(workOutdir,"SFWMD_Pranks.csv"),
       row.names = FALSE)
```

WetlandStress_SJRWMD_EMT2024.R

```
#-------------------------------------------------------------------------------
#  Developed by: Kevin A. Rodberg, Science Supervisor
#                 Resource Evaluation Section, Water Supply Bureau, SFWMD
#                 (561) 682-6702
#
#  January 2019
#
#  Script is provided to import spreadsheet data,
#  calculate percentile rankings, and plot figures
#
# Modified by: Jose Grisales, Scientist 4, Water Supply Bureau,
#              Ground Water Technical Unit.
#              jgrisale@SFWMD.gov
#
# January 2024
#
# Script calculates P80, normality test, Yearly P80 standard deviations based on
# possible yearly range permutations.
#-------------------------------------------------------------------------------
#--
#   package management:
#     provide automated means for first time use of script to automatically
#        install any new packages required for this code, with library calls
#        wrapped in a for loop.
#--
list.of.pkgs <-  c("dplyr",
                   "ggplot2",
                   "reshape2",
                   "data.table",
                   "readxl",
                   "purrr",
                   "zoo")

new.pkgs <- list.of.pkgs[!(list.of.pkgs %in% installed.packages()[, "Package"])]

if (length(new.pkgs)){ install.pkgs(new.pkgs) }
for (pkg in list.of.pkgs){ library(pkg,character.only = TRUE)}

#Hydrographs and Histograms? 1=Yes, 0=No
HydroHist=1

workdir = "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
  Update2023/SJRWMD/"

workOutdir = "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
  Update2023/Script_N_Products/Products/SJRWMD_StationwiseStats/"
#-------------------------------------------------------------------------------
file <- paste0(workdir ,'SJRWMD_Class1_Wtlnds_NAVD88_forKevin.xlsx')
sheets <- readxl::excel_sheets(file)

#Assure continuous date range.
drange = as.data.table(seq.Date(as.Date('2006/1/1'),as.Date('2023/12/31'),by=1))
names(drange)= 'DATE'
```

```
bind_listdf<-list()
for (sh in sheets){

  tempDF<-as.data.frame(
    readxl::read_excel(file, sheet = sh, skip = 0)
  )
  names(tempDF)=c('DATE', 'value')


  tempDF=tempDF[tempDF$DATE>=as.Date('2006/1/1'),]

  tempDF2<-dplyr::left_join(x=drange,
                           y=tempDF,
                           by=c('DATE'))
  tempDF2$station=sh
  bind_listdf[[sh]]=tempDF2
}#Warnings are a product of a character entry at the end of the numerical
#value field

df<-data.table::rbindlist(bind_listdf)

df$DATE <- as.Date(df$DATE)
names(df)<-c('DATE','Value','STATION')

Wetlands.SJR<- df[order(df$STATION,df$DATE),]
Wetlands.SJR<- Wetlands.SJR[,c('STATION','DATE','Value')]
#casting and melting the data to average repeated date entries=================
#Not necessary if each date is reported only once for each station,
#which is the case this time around. I confirmed by casting the data without
#an aggregation function, which leads to total counts.

cat (paste0('Interpolating and imputing missing data','\n'))
unique.stations <- unique(Wetlands.SJR$STATION)
AllStations_SJ <- list()
for (dbk in unique.stations){
  cat(paste(dbk,'\n'))

  OneStation<- Wetlands.SJR[Wetlands.SJR$STATION ==dbk,]

  OneStation.approx <- OneStation %>%
    mutate(approx = zoo::na.approx(Value,
                                   rule=1,
                                   na.rm=FALSE))

  AllStations_SJ[[dbk]] <- OneStation.approx
}

SJR_stations<-data.table::rbindlist(AllStations_SJ)
#Permutations-----------------------------------------------------------------
Start=2006
End=2022

Minimum_Range=5

Years_Avail<-seq(Start,End,by=1)
```

```
Start_End_permutations<-data.frame(Start=c(NA),End=c(NA))

row_pos=0
for(yr in Years_Avail){

  First_stop=yr+Minimum_Range

  End_Sequence<-c(First_stop)

  Ramaining_Yrs<-End-First_stop
  temp_stop=First_stop
  for(num in c(1:Ramaining_Yrs)){

    temp_stop=temp_stop+1

    End_Sequence<-append(End_Sequence,temp_stop)

  }

  for(num_e in End_Sequence){
    row_pos=row_pos+1

    Start_End_permutations[row_pos,]$Start<-yr
    Start_End_permutations[row_pos,]$End<-num_e
  }
}

row.names(Start_End_permutations)<-1:nrow(Start_End_permutations)
Start_End_permutations<-Start_End_permutations[Start_End_permutations$End<=End,]
#End of Permutations calc-----------------------------------------------------
names(SJR_stations)[2]<-"DAILY_DATE"

SJR_stations$DAILY_DATE<-as.Date(SJR_stations$DAILY_DATE,
                                 format="%Y-%m-%d")
#Begins Permutation P80 calculations===========================================
Station_list<-as.vector(unlist(SJR_stations%>%dplyr::distinct(STATION)))

PivotPranks <- NULL
#Temp_SD_P80<-NULL
for (permut_row in (1:nrow(Start_End_permutations))){

  StartEnd_limits<-Start_End_permutations[permut_row,]

  start = StartEnd_limits$Start
  end = StartEnd_limits$End

  rang = paste0(start,"-",end)

  #defining what is the original format of your date
  Date_Filter<-strptime(paste0(start,'-01-01'),format="%Y-%m-%d")
  #defining what is the desired format of your date
  Date_Filter<-as.Date(Date_Filter,format="%Y-%m-%d")
```

```
  Date_Filter_end<-strptime(paste0(end,'-12-31'),format="%Y-%m-%d")
  Date_Filter_end<-as.Date(Date_Filter_end,format="%Y-%m-%d")

  qStations <- SJR_stations[!is.na(SJR_stations$approx) &
                            SJR_stations$DAILY_DATE >= Date_Filter &
                            SJR_stations$DAILY_DATE <= Date_Filter_end,]

#Weibull formulation of plotting position = type 6 quantile calculation
#algorithm
  QByYr<-as.data.table(qStations)[,as.list(
                                  quantile(approx,probs=c(.2, .5),type=6)
                                  ),by=STATION]

  names(QByYr)= c("STATION","P80","P50")
  QByYr$drange <- rang

  Temp_stats_holder<-NULL

  for(stn in Station_list){

    qStations_one<-qStations[qStations$STATION %in% stn,]

    Temp_sd<-as.data.frame(
      qStations_one %>%
        dplyr::summarise(SD=stats::sd(approx,na.rm = TRUE))
    )

    Temp_sd$SD<-round(Temp_sd$SD,digits = 2)

    n_obsval<-nrow(qStations_one[!is.na(qStations_one$approx),])
    Temp_sd$n_obs<-n_obsval

    Temp_sd$STATION<-stn

    Temp_mean<-mean(qStations_one$approx,na.rm=TRUE)
    sd_3_high<-Temp_mean+(Temp_sd$SD*2.5)
    sd_3_low<-Temp_mean-(Temp_sd$SD*2.5)


    Temp_sd$Peaks<-nrow(qStations_one[qStations_one$approx>sd_3_high|
                                      qStations_one$approx<sd_3_low,])

    Temp_stats_holder<-rbind(Temp_stats_holder,Temp_sd)

  }

  QByYr<-left_join(QByYr,Temp_stats_holder,
                   by="STATION")

  PivotPranks<-rbind(PivotPranks,QByYr,fill=TRUE)
}#End of loop

PivotPranks<-PivotPranks[order(STATION,SD),]

PivotPranks$Tst_WilkShapiro_pval<-888 #888 is a place holder
```

```
PivotPranks$Tst_AndDar_pval<-888 #888 is a place holder
#Saving Data=====================================================================
fwrite(SJR_stations,file = paste0(workOutdir,"SJR_DataTable.csv"),
       row.names = FALSE)
#Graphics========================================================================
Station_list<-as.vector(unlist(SJR_stations%>%dplyr::distinct(STATION)))

WL_Data_4graphics<-SJR_stations[!is.na(SJR_stations$approx),]
#Graphing and normality test loop------------------------------------------------
for (loc in Station_list){

  WDF<-WL_Data_4graphics[WL_Data_4graphics$STATION %in% loc,]
  #graphics.off()
  for (permut_row in (1:nrow(Start_End_permutations))){

    StartEnd_limits<-Start_End_permutations[permut_row,]

    start = StartEnd_limits$Start
    end = StartEnd_limits$End

    rang = paste0(start,"_",end)
    rang_=paste0(start,"-",end)

    #defining what is the original format of your date
    Date_Filter_start<-strptime(paste0(start,'-01-01'),format="%Y-%m-%d")
    #defining what is the desired format of your date
    Date_Filter_start<-as.Date(Date_Filter_start,format="%Y-%m-%d")


    Date_Filter_end<-strptime(paste0(end,'-12-31'),format="%Y-%m-%d")
    Date_Filter_end<-as.Date(Date_Filter_end,format="%Y-%m-%d")


    lim_WDF<-WDF[WDF$DAILY_DATE >= Date_Filter_start &
                   WDF$DAILY_DATE <= Date_Filter_end,]
#Shapiro-Wilk Test---------------------------------------------------------------
# H0: The data is "normally" distributed
# If p-values is < 0.05, then the distribution in question is "significantly"
# different from the "normal" distribution.
# p-value calculations are not trusted above 5,000 data points.

     if(!nrow(lim_WDF)==0){
      sd_test<-stats::sd(lim_WDF$approx,na.rm=TRUE)

      if (!sd_test==0){
#Anderson-Darling test, slightly less sensitive than Shapiro-Wilk but preferred
#for large samples.
        Anderson_Darling_test<-nortest::ad.test(lim_WDF$approx)
        PivotPranks[PivotPranks$STATION%in%loc &
                      PivotPranks$drange %in% rang_]$Tst_AndDar_pval<-
                        Anderson_Darling_test$p.value

        if (nrow(lim_WDF) > 5000){
          Shapiro_test_results<-stats::shapiro.test(sample(
            lim_WDF$approx,5000))
```

```
        }else{
          Shapiro_test_results<-stats::shapiro.test(lim_WDF$approx)
        }

        PivotPranks[PivotPranks$STATION%in%loc &
                      PivotPranks$drange %in% rang_]$Tst_WilkShapiro_pval<-
                        Shapiro_test_results$p.value

        temp_n=nrow(lim_WDF)
        temp_mean=mean(lim_WDF$approx)
        temp_sd=stats::sd(lim_WDF$approx)
        temp_binwidth=30

        if (HydroHist==1){
          p<-
            ggplot(lim_WDF, aes(x=approx)) +
            geom_histogram(aes(y=after_stat(density)),
                           color="black", fill="white")+

            ggplot2::stat_function(fun = dnorm,
                                   args = with(
                                     lim_WDF,c(mean=temp_mean,sd=temp_sd)),
                                   col="red",linewidth=1.2,linetype=2
            )+

            labs(title=paste(loc,"-",rang))+
            theme(plot.title = element_text(hjust = 0.5))

          ggsave(paste0(workOutdir,"Histograms/",loc,"_",rang,".png"),
                 width=10,height=8,units="in",dpi=444)
#Hydrographs----------------------------------------------------------------
          p<-ggplot(lim_WDF) +

            geom_line(data=lim_WDF,aes(x=DAILY_DATE,y=approx),
                      linewidth=1,linetype="solid")+

# geom_point(data = lim_WDF, aes(x=DAILY_DATE,y=Heightcorrected_approx),
#             size=0.5)+

            scale_x_date (
              name= "Year",
              breaks = waiver(),
              date_breaks = "2 years",
              labels = waiver(),
              date_labels = "%Y",
              minor_breaks = waiver(),
              date_minor_breaks = waiver(),
              limits = c(min(lim_WDF$DAILY_DATE),max(lim_WDF$DAILY_DATE))
            )+

            # scale_y_continuous(
            #   name = "Heads\n(feet NAVD)",
            #   breaks = scales::breaks_extended(9),
            #   limits=c(
            #     min(lim_WDF$Heightcorrected_approx),
```

```
          #     max(lim_WDF$Heightcorrected_approx)
          #     )
          #   )+

          # scale_color_manual(values = c("black","firebrick2"))+
        # guides(col=guide_legend("Data set"))+

        labs(title=paste(loc,"-",rang),
             y = "Heads\n(feet NAVD88)")+

          # annotate("text",x=max(lim_WDF$Date),
          #          hjust = 1,
          #          y=max(c(max(lim_WDF$value),max(lim_WDF$value))),
          #          label=paste("Production Date:",Sys.Date()),
          #          size=2)+

          theme(plot.subtitle = element_text(family="mono",size=9),
                axis.text.x =  element_text(family = "sans",
                                            size = 10,angle = 33,
                                            hjust = 1, vjust = 1))

        ggsave(paste0(workOutdir,"Hydrographs/",loc,"_",rang,".png"),
               width=10,height=8,units="in",dpi=444)
      }
    }#Extra test when all values are repeated estimates
  }#Extra for when there are no values in a permutation.
 }
}#End of main loop
fwrite(PivotPranks,file = paste0(workOutdir,"SJR_Pranks.csv"),row.names = FALSE)
```

WetlandStress_SWFWMD_EMT2024.R

```
#-------------------------------------------------------------------------------
#  Developed by: Kevin A. Rodberg, Science Supervisor
#                 Resource Evaluation Section, Water Supply Bureau, SFWMD
#                 (561) 682-6702
#
#  January 2019
#
#  Script is provided to import spreadsheet data,
#  calculate percentile rankings, and plot figures
#
# Modified by: Jose Grisales, Scientist 4, Water Supply Bureau,
#              Ground Water Technical Unit.
#              jgrisale@SFWMD.gov
#
# January 2024
#
# Script calculates P80, normality test, Yearly P80 standard deviations based on
# possible yearly range permutations.
#-------------------------------------------------------------------------------

#--
#   package management:
#     provide automated means for first time use of script to automatically
#        install any new packages required for this code, with library calls
#        wrapped in a for loop.
#--
list.of.pkgs <-  c("readr",
                   "dplyr",
                   "zoo",
                   "ggplot2",
                   "reshape2",
                   "data.table",
                   "readxl",
                   "purrr")

new.pkgs <- list.of.pkgs[!(list.of.pkgs %in% installed.packages()[, "Package"])]

if (length(new.pkgs)){ install.packages(new.pkgs) }
for (pkg in list.of.pkgs){ library(pkg,character.only = TRUE)}

#Hydrographs and Histograms? 1=Yes, 0=No
HydroHist=1

workdir =
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
  Update2023/SWFWMD/Ready4Script_NAVD88/"

workOutdir = "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
  Update2023/Script_N_Products/Products/SWFWMD_StationwiseStats/"
#===============================================================================
drange = as.data.frame(seq.Date(as.Date('2006/1/1'),as.Date('2023/12/31'),by=1))
names(drange)= 'DAILY_DATE'

xlFiles <-list.files(path=workdir)
```

```
SWF_unpivot<- NULL
for (file in xlFiles){
   # sheets <- excel_sheets(file)
    #The latest data, provides a single sheet per file
   # sheets <- excel_sheets(paste0(workdir,file))
    #The latest data, provides a single sheet per file

  # for (sht in sheets) {
  #   cat(paste0(file,'::',sht,'\n'))
  # }

  # df <- map_df(sheets, ~ read_excel(file, sheet = .x, skip = 0))
#--------------------------------------------------------------------------------
  df <- data.table::as.data.table(read_excel(paste0(workdir,file),sheet=1))

  names(df) <- c("Site ID","STATION","Parameter","DAILY_DATE","value",
    "Units","No of Records","Data Source","Status","Quality Description")

  df$DAILY_DATE <- as.Date(df$DAILY_DATE)

  df.Wide <- dcast(df[,c(4,2,5)],#4:Date, 2:Site name, 3:NAVD88 WL value
                   DAILY_DATE~STATION,value.var = "value",
                   fun.aggregate=mean
                   )#No issues, so long as there is only one station per
  #file. Column orders are also important.

  df.AllDates<-data.table::as.data.table(
    dplyr::left_join(drange,
            df.Wide[df.Wide$DAILY_DATE>= as.Date('2006/01/01'),],
            by='DAILY_DATE')
  )

  df.unpivot <- melt(df.AllDates,id='DAILY_DATE')

  SWF_unpivot <-rbind(SWF_unpivot,df.unpivot)
}
#^Spreadsheets merged------------------------------------------------------------
names(SWF_unpivot)<-c('DAILY_DATE','STATION','Value')

Wetlands.SWF<- SWF_unpivot[order(SWF_unpivot$STATION,SWF_unpivot$DAILY_DATE),]
Wetlands.SWF<- Wetlands.SWF[,c('STATION','DAILY_DATE','Value')]

unique.stations <- unique(as.vector(Wetlands.SWF$STATION))
AllStations_SW <- data.frame()
#Approximations------------------------------------------------------------------
cat (paste0('Interpolating and imputing missing data','\n'))
for (dbk in unique.stations){
  cat(paste(dbk,'\n'))

  OneStation <- Wetlands.SWF[Wetlands.SWF$STATION ==dbk,]

  OneStation.approx <- OneStation %>%
    mutate(approx = zoo::na.approx(Value,
                                   rule=1,
                                   na.rm=FALSE))
```

```
  AllStations_SW <- rbind(AllStations_SW,OneStation.approx)
}
#Permutations----------------------------------------------------------------
Start=2006
End=2022

Minimum_Range=5

Years_Avail<-seq(Start,End,by=1)

Start_End_permutations<-data.frame(Start=c(NA),End=c(NA))

row_pos=0
for(yr in Years_Avail){

  First_stop=yr+Minimum_Range

  End_Sequence<-c(First_stop)

  Ramaining_Yrs<-End-First_stop
  temp_stop=First_stop
  for(num in c(1:Ramaining_Yrs)){

    temp_stop=temp_stop+1

    End_Sequence<-append(End_Sequence,temp_stop)

  }

  for(num_e in End_Sequence){
    row_pos=row_pos+1

    Start_End_permutations[row_pos,]$Start<-yr
    Start_End_permutations[row_pos,]$End<-num_e
  }
}

row.names(Start_End_permutations)<-1:nrow(Start_End_permutations)
Start_End_permutations<-Start_End_permutations[Start_End_permutations$End<=End,]
#End of Permutations calc----------------------------------------------------
AllStations_SW$DAILY_DATE<-as.Date(AllStations_SW$DAILY_DATE,
                                  format="%Y-%m-%d")
#Begins Permutation P80 calculations=========================================
Station_list<-as.vector(unlist(AllStations_SW%>%dplyr::distinct(STATION)))

PivotPranks <- NULL
# Temp_SD_P80<-NULL
for (permut_row in (1:nrow(Start_End_permutations))){

  StartEnd_limits<-Start_End_permutations[permut_row,]

  start = StartEnd_limits$Start
  end = StartEnd_limits$End
```

```
  rang = paste0(start,"-",end)

  #defining what is the original format of your date
  Date_Filter<-strptime(paste0(start,'-01-01'),format="%Y-%m-%d")
  Date_Filter<-as.Date(Date_Filter,format="%Y-%m-%d")

  #defining what is the original format of your date
  Date_Filter_end<-strptime(paste0(end,'-12-31'),format="%Y-%m-%d")
  Date_Filter_end<-as.Date(Date_Filter_end,format="%Y-%m-%d")

  qStations <- AllStations_SW[!is.na(AllStations_SW$approx) &
                              AllStations_SW$DAILY_DATE >= Date_Filter &
                              AllStations_SW$DAILY_DATE <= Date_Filter_end,]

#Weibull formulation of plotting position = type 6 quantile calculation
#algorithm.
  QByYr<-as.data.table(qStations)[,as.list(
                                quantile(approx,probs=c(.2, .5),type=6)
                                ),by=STATION]

  names(QByYr)= c("STATION","P80","P50")
  QByYr$drange <- rang

  Temp_stats_holder<-NULL
  for(stn in Station_list){

    qStations_one<-qStations[qStations$STATION %in% stn,]

    Temp_sd<-as.data.frame(
      qStations_one %>%
        dplyr::summarise(SD=stats::sd(approx,na.rm = TRUE))
    )

    Temp_sd$SD<-round(Temp_sd$SD,digits = 2)

    n_obsval<-nrow(qStations_one[!is.na(qStations_one$approx),])
    Temp_sd$n_obs<-n_obsval

    Temp_sd$STATION<-stn

    Temp_mean<-mean(qStations_one$approx,na.rm=TRUE)
    sd_3_high<-Temp_mean+(Temp_sd$SD*2.5)
    sd_3_low<-Temp_mean-(Temp_sd$SD*2.5)


    Temp_sd$Peaks<-nrow(qStations_one[qStations_one$approx>sd_3_high|
                                    qStations_one$approx<sd_3_low,])

    Temp_stats_holder<-rbind(Temp_stats_holder,Temp_sd)
  }

  QByYr<-left_join(QByYr,Temp_stats_holder,
                  by="STATION")

  PivotPranks<-rbind(PivotPranks,QByYr,fill=TRUE)
```

```
}#End of loop

PivotPranks<-PivotPranks[order(STATION,SD),]

PivotPranks$Tst_WilkShapiro_pval<-888 #888 is a place holder
PivotPranks$Tst_AndDar_pval<-888 #888 is a place holder
#Saving Data==================================================================
fwrite(AllStations_SW,file = paste0(workOutdir,"SWFWMD_DataTable.csv"),
       row.names = FALSE)
#Graphics=====================================================================
Station_list<-as.vector(unlist(AllStations_SW%>%dplyr::distinct(STATION)))

WL_Data_4graphics<-AllStations_SW[!is.na(AllStations_SW$approx),]
#Graphing and normality test loop---------------------------------------------
for (loc in Station_list){

  WDF<-WL_Data_4graphics[WL_Data_4graphics$STATION %in% loc,]
  #graphics.off()
  for (permut_row in (1:nrow(Start_End_permutations))){

    StartEnd_limits<-Start_End_permutations[permut_row,]

    start = StartEnd_limits$Start
    end = StartEnd_limits$End

    rang = paste0(start,"_",end)
    rang_=paste0(start,"-",end)

    #defining what is the original format of your date
    Date_Filter_start<-strptime(paste0(start,'-01-01'),format="%Y-%m-%d")
    #defining what is the desired format of your date
    Date_Filter_start<-as.Date(Date_Filter_start,format="%Y-%m-%d")

    #defining what is the original format of your date
    Date_Filter_end<-strptime(paste0(end,'-12-31'),format="%Y-%m-%d")
    Date_Filter_end<-as.Date(Date_Filter_end,format="%Y-%m-%d")


    lim_WDF<-WDF[WDF$DAILY_DATE >= Date_Filter_start &
                   WDF$DAILY_DATE <= Date_Filter_end,]
#Shapiro-Wilk Test------------------------------------------------------------
    # H0: The data is "normally" distributed
    # If p-values is < 0.05, then the distribution in question is
    # "significantly" different from the "normal" distribution.
    # p-value calculations are not trusted above 5,000 data points.

    sd_test<-stats::sd(lim_WDF$approx)

    if (!sd_test==0){
#Anderson-Darling test,
#slightly less sensitive than Shapiro-Wilk but preferred for large samples.
      Anderson_Darling_test<-nortest::ad.test(lim_WDF$approx)
        PivotPranks[PivotPranks$STATION%in%loc &
          PivotPranks$drange %in% rang_]$Tst_AndDar_pval<-
            Anderson_Darling_test$p.value
```

```
      if (nrow(lim_WDF) > 5000){
        Shapiro_test_results<-stats::shapiro.test(sample(
          lim_WDF$approx,5000))
      }else{
        Shapiro_test_results<-stats::shapiro.test(lim_WDF$approx)
      }

      PivotPranks[PivotPranks$STATION%in%loc &
                    PivotPranks$drange %in% rang_]$Tst_WilkShapiro_pval<-
                      Shapiro_test_results$p.value

      temp_n=nrow(lim_WDF)
      temp_mean=mean(lim_WDF$approx)
      temp_sd=stats::sd(lim_WDF$approx)
      temp_binwidth=30

      if (HydroHist==1){
        p<-
          ggplot(lim_WDF, aes(x=approx)) +
          geom_histogram(aes(y=after_stat(density)),color="black",
                         fill="white")+

          ggplot2::stat_function(fun = dnorm,
                                 args =
                                   with(lim_WDF,c(mean=temp_mean,sd=temp_sd)),
                                 col="red",linewidth=1.2,linetype=2)+
          labs(title=paste(loc,"-",rang))+
          theme(plot.title = element_text(hjust = 0.5))

        ggsave(paste0(workOutdir,"Histograms/",loc,"_",rang,".png"),
               width=10,height=8,units="in",dpi=444)
#Hydrographs----------------------------------------------------------------
        p<-ggplot(lim_WDF) +

          geom_line(data=lim_WDF,aes(x=DAILY_DATE,y=approx),
                    linewidth=1,linetype="solid")+

        #geom_point(data = lim_WDF, aes(x=DAILY_DATE,y=Heightcorrected_approx),
          #size=0.5)+

          scale_x_date (
            name= "Year",
            breaks = waiver(),
            date_breaks = "2 years",
            labels = waiver(),
            date_labels = "%Y",
            minor_breaks = waiver(),
            date_minor_breaks = waiver(),
            limits = c(min(lim_WDF$DAILY_DATE),max(lim_WDF$DAILY_DATE))
          )+

          # scale_y_continuous(
          #   name = "Heads\n(feet NAVD)",
          #   breaks = scales::breaks_extended(9),
```

```
          #   limits=c(
          #     min(lim_WDF$Heightcorrected_approx),
          #     max(lim_WDF$Heightcorrected_approx)
          #     )
          #   )+

          #scale_color_manual(values = c("black","firebrick2"))+
        #guides(col=guide_legend("Data set"))+

        labs(title=paste(loc,"-",rang),
             y = "Heads\n(feet NAVD88)")+

          # annotate("text",x=max(lim_WDF$Date),
          #          hjust = 1,
          #          y=max(c(max(lim_WDF$value),max(lim_WDF$value))),
          #          label=paste("Production Date:",Sys.Date()),
          #          size=2)+

          theme(plot.subtitle = element_text(family="mono",size=9),
                axis.text.x =  element_text(family = "sans",
                                            size = 10,angle = 33,
                                            hjust = 1, vjust = 1))

        ggsave(paste0(workOutdir,"Hydrographs/",loc,"_",rang,".png"),
               width=10,height=8,units="in",dpi=444)
      }
    }#Extra test when all values are repeated estimates
  }
}#End of main loop
fwrite(PivotPranks,file = paste0(workOutdir,"SWFWMD_Pranks.csv"),
       row.names = FALSE)
```

```
Optimal_RNG_finder_EMT2024.R
#==============================================================================
#------------------------------------------------------------------------------
# Developed by: Jose O Grisales, Scientist 4,
#                 Ground Water Technical, Water Supply Bureau, SFWMD
#                 (561) 536-8073
#
# Development Date: 01/26/2024
#------------------------------------------------------------------------------
# Description: This script reads in the prank.CSVs that are a product from the
#   WetlandStress_*.R scripts. Referencing the standard deviation for the P80
#   values, within each year range permutation, the script identifies the
#   optimal year range for maximizing normality across all station.
#------------------------------------------------------------------------------
library(data.table)
library(dplyr)
library(ggplot2)
library(RColorBrewer)
library(tcltk)

Outputdir<-tcltk::tk_choose.dir(
  caption="Choose Destination Folder for Histograms to Review")

dir.create(file.path(Outputdir, "/Hydrographs"))

dir.create(file.path(Outputdir, "/Drange_Theta_RidgeStressed"))
dir.create(file.path(Outputdir, "/Drange_Theta_Ridge_NOT_stressed"))
dir.create(file.path(Outputdir, "/Drange_Theta_PlainStressed"))
dir.create(file.path(Outputdir, "/Drange_Theta_Plain_NOT_stressed"))



Directories_l<-c(
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023/
    Script_N_Products/Products/SFWMD_StationwiseStats/",
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023/
    Script_N_Products/Products/SJRWMD_StationwiseStats/",
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023/
    Script_N_Products/Products/SWFWMD_StationwiseStats/")

Wetland_characteristics<-data.table::fread(
  paste0("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
    Update2023/Class 1 Wetlands Detailed Info 2021-2023 Reassessments.csv"),
  header = TRUE)

SFWMD_prank<-data.table::fread(
  paste0(Directories_l[1],"SFWMD_Pranks.csv"),
  header = TRUE)

SJRWMD_prank<-data.table::fread(
  paste0(Directories_l[2],"SJR_Pranks.csv"),
  header = TRUE)

SWFWMD_prank<-data.table::fread(
  paste0(Directories_l[3],"SWFWMD_Pranks.csv"),
```

```
  header = TRUE)

Directories_l_hist<-c()
pos=0
for (direc in Directories_l){
  pos=pos+1

  Directories_l_hist[pos]<- paste0(direc,"Histograms/")

  pos=pos+1

  Directories_l_hist[pos]<- paste0(direc,"Hydrographs/")
}
#--------------------------------------------------------------------------------
pranks_allstations<-data.table::rbindlist(
  list(SFWMD_prank,SJRWMD_prank,SWFWMD_prank))#Pranks merged

pranks_allstations$Date_start<-as.numeric(
  base::substring(pranks_allstations$drange,0,4))#Pulling begin date

pranks_allstations$Date_end<-as.numeric(
  base::substring(pranks_allstations$drange,6,9))#Pulling end date

pranks_allstations$Total_yrs<-
  pranks_allstations$Date_end-pranks_allstations$Date_start
#--------------------------------------------------------------------------------
pranks_allstations<-pranks_allstations[,c(1:5,12,6,8)]

Permutation_tally<-as.data.table(
  pranks_allstations%>%dplyr::group_by(STATION)%>%
  dplyr::tally()%>%ungroup()
)
#Removing wetlands with no reference edge elevation-----------------------------

Wetland_characteristics<-
  Wetland_characteristics[!is.na(Wetland_characteristics$Ref_edge_NAVD88),]


Class1_ss<-#According to the provided class 1 detailed info
  pranks_allstations[
    pranks_allstations$STATION %in% Wetland_characteristics$Names_2024,]

Review_class1_exclusions<-dplyr::anti_join(Permutation_tally,
                            Class1_ss,
                            by=c("STATION"))#Optional to Review

#Re-tally, accounting only for the class 1 wetlands provided====================
Permutation_tally<-as.data.table(
  Class1_ss%>%dplyr::group_by(STATION)%>%
    dplyr::tally()%>%ungroup()
)
#We are removing any wetlands with less than 90% of the permutations.
#The justification behind this decision is that the station does not have as
#much observations as the remaining stations, and will only serve to skew
#the rankings.
```

```
Few_permutations<-
  Permutation_tally[
    Permutation_tally$n<ceiling(max(Permutation_tally$n)*.90),]$STATION

Permutation_tally<-
  Permutation_tally[!(Permutation_tally$STATION %in% Few_permutations),]

Class1_ss<-#Removing the station with few permutations
  Class1_ss[Class1_ss$STATION %in% Permutation_tally$STATION,]
#Adding wetland type information to the tally table============================
#Columns are name, stressed or not, and ridge or plain.
Wtl_charctrstcs_short<-Wetland_characteristics[,c(6,26,30)]
names(Wtl_charctrstcs_short)[1]<-"STATION"

Permutation_tally_md<-dplyr::left_join(Permutation_tally,
                      Wtl_charctrstcs_short,
                      by=c("STATION"))

Permutation_tally_md$Group<-NA

Permutation_tally_md$Group<-paste0(
  Permutation_tally_md$`Physiographic Region`,"_",
  Permutation_tally_md$`Current Status`)


WTL_groupings<-as.vector(unlist(Permutation_tally_md%>%dplyr::distinct(Group)))
#Sub-setting into wetland groupings---------------------------------------------
Plains_not_stressed<-
  Permutation_tally_md[Permutation_tally_md$Group %in% WTL_groupings[1],]

Ridge_not_Stressed<-
  Permutation_tally_md[Permutation_tally_md$Group %in% WTL_groupings[2],]

Plains_Stressed<-
  Permutation_tally_md[Permutation_tally_md$Group %in% WTL_groupings[3],]

Ridge_Stressed<-
  Permutation_tally_md[Permutation_tally_md$Group %in% WTL_groupings[4],]
#Sub-setting the prank data into the wetland groupings--------------------------
#Calculating thethas for class1_ss=============================================
Wtlnds_REE<-Wetland_characteristics[,c(6,8)]#Names, reference edge elevation

names(Wtlnds_REE)<-c("STATION","REE_NAVD88")

Class1_ss<-dplyr::left_join(Class1_ss,
                            Wtlnds_REE,
                            by=c("STATION"))

#Equation 1, Appendix F.
Class1_ss$Theta<-Class1_ss$REE_NAVD88 - Class1_ss$P80
#==============================================================================
prank_plains_notstressed<-
  Class1_ss[Class1_ss$STATION %in% Plains_not_stressed$STATION,]
prank_plains_notstressed$Group<-"Plains_Notstressed"
```

```
nrow(prank_plains_notstressed%>%dplyr::distinct(STATION))
#--------------------------------------------------------------------------------
prank_plains_stressed<-
  Class1_ss[Class1_ss$STATION %in% Plains_Stressed$STATION,]
prank_plains_stressed$Group<-"Plains_Stressed"

nrow(prank_plains_stressed%>%dplyr::distinct(STATION))
#--------------------------------------------------------------------------------
prank_ridge_stressed<-
  Class1_ss[Class1_ss$STATION %in% Ridge_Stressed$STATION,]
prank_ridge_stressed$Group<-"Ridge_Stressed"

nrow(prank_ridge_stressed%>%dplyr::distinct(STATION))
#--------------------------------------------------------------------------------
prank_ridge_notstressed<-
  Class1_ss[Class1_ss$STATION %in% Ridge_not_Stressed$STATION,]

prank_ridge_notstressed$Group<-"Ridge_Notstressed"

nrow(prank_ridge_notstressed%>%dplyr::distinct(STATION))
#--------------------------------------------------------------------------------
if ((nrow(prank_plains_notstressed)+
     nrow(prank_plains_stressed)+
     nrow(prank_ridge_stressed)+
     nrow(prank_ridge_notstressed))==nrow(Class1_ss)){

      cat("PASSED: Subset amounts total to Class1_ss totals")

}

list_DTs_pranks_groups<-list(prank_plains_notstressed,prank_plains_stressed,
                             prank_ridge_stressed,prank_ridge_notstressed)

for (DT in list_DTs_pranks_groups){

  group_write<-DT$Group[1]
  data.table::fwrite(DT,paste0(Outputdir,'/',
                               group_write,"_Summaries.csv"),row.names = FALSE)

}
#Ranking date range; methods=====================================================
min_n=base::min(Permutation_tally_md$n)

#Ideally, we only want the "best" date ranges. Which is why we are only going
# to look at the top 1/3 of the ranked permutations.

Index_tops<-ceiling(max(Permutation_tally_md$n)*1/3)

#The following routine orders by ascending standard deviation,
#descending range of years,
#descending number of observations, and descending Wilks Shapiro test p-value;
#then, selects the n# of indexed values (ascending) for each station.

n_lowest_ss_DTs<-list()
```

```
Drange_Rankings_ls<-list()
for (DTG in list_DTs_pranks_groups){

  Group_dtg<-DTG[1,]$Group#Name for list of data tables

  n_lowest_ss<-as.data.table(
    DTG%>%
    dplyr::arrange(SD,dplyr::desc(Total_yrs),
                   dplyr::desc(n_obs),desc(Tst_WilkShapiro_pval))%>%
    group_by(STATION)%>%dplyr::slice(1:min_n)
  )


  Stations_n<-nrow(n_lowest_ss%>%dplyr::distinct(STATION))# Number of stations

  Ranking<-as.data.frame(rep(seq(1,min_n,by=1),Stations_n))
  names(Ranking)<-"Ranking"

  n_lowest_ss<-cbind(n_lowest_ss,Ranking)

  #Adding to list of data tables (n_lowest_ss_DTs)
  n_lowest_ss_DTs[[Group_dtg]]<-n_lowest_ss
#-------------------------------------------------------------------------------

  Cumulative_rank<-as.data.frame(
    n_lowest_ss%>%dplyr::group_by(drange)%>%
      dplyr::summarise(cumulativerank=sum(Ranking))
  )

  Cumulative_rank<-Cumulative_rank[order(Cumulative_rank$cumulativerank),]
  Cumulative_rank$Group<-Group_dtg


  Cumulative_rank<-Cumulative_rank[1:Index_tops,]

#Adding to list of data tables (Drange_Rankings_ls)
  Drange_Rankings_ls[[Group_dtg]]<-Cumulative_rank
}
#===============================================================================
Rankings<-rbindlist(Drange_Rankings_ls)

Rankings_tally<-as.data.table(
  Rankings%>%dplyr::group_by(drange)%>%
    dplyr::tally()%>%ungroup()
)
#Keeping only top rankings present in all 4 wetland groupings
Rankings_tally<-Rankings_tally[Rankings_tally$n>3,]

Rankings_2consider<-Rankings[Rankings$drange %in% Rankings_tally$drange,]

data.table::fwrite(Rankings_2consider,paste0(Outputdir,"/Drange_2consider.csv"),
                   row.names = FALSE)

#One of the requested criteria, is that we try to keep the year when
#field observations took place. This time around, that is 2022.
```

```
Decision_table<-Rankings[base::grepl("2022",x=Rankings$drange),]

drange_decision_manual="2015-2022"
#P80 histograms for top date ranges---------------------------------------------
#Sub-setting the statistical information, from the date ranges of interest,
#for each group.
Plains_NotstressedP80<-
  n_lowest_ss_DTs$Plains_Notstressed[
    n_lowest_ss_DTs$Plains_Notstressed[,drange %in% Rankings_2consider$drange],]

Plains_StressedP80<-
  n_lowest_ss_DTs$Plains_Stressed[
    n_lowest_ss_DTs$Plains_Stressed[,drange %in% Rankings_2consider$drange],]

Ridge_StressedP80<-n_lowest_ss_DTs$Ridge_Stressed[
  n_lowest_ss_DTs$Ridge_Stressed[,drange %in% Rankings_2consider$drange],]

Ridge_NotstressedP80<-n_lowest_ss_DTs$Ridge_Notstressed[
  n_lowest_ss_DTs$Ridge_Notstressed[,drange %in% Rankings_2consider$drange],]

P80_ls_bygroup<-list(
  Plains_NotstressedP80,Plains_StressedP80,
  Ridge_StressedP80,Ridge_NotstressedP80)

Drange_of_interest<-as.vector(
  unlist(Rankings_2consider%>%dplyr::distinct(drange)))

for (DT80 in P80_ls_bygroup){

  Temp_group=DT80$Group[1]

  for (DRNG in Drange_of_interest){

    Temp_plotset<-DT80[DT80$drange %in% DRNG,]
    temp_mean<-round(base::mean(Temp_plotset$Theta),digits = 3)
    temp_sd<-round(stats::sd(Temp_plotset$Theta),digits = 3)

    spacer<-temp_mean*.05

    STN_numb<-nrow(Temp_plotset%>%dplyr::distinct(STATION))
    stn_pnt_cols<-grDevices::colorRampPalette(
      RColorBrewer::brewer.pal(12,"Paired"))(STN_numb)

    p<-
      ggplot(Temp_plotset, aes(x=Theta,y=Ranking)) +
      geom_point(aes(color=STATION),size=4)+
      scale_color_manual(values = stn_pnt_cols)+

      geom_text(
        label=Temp_plotset$STATION,
        nudge_x=-(2*spacer), nudge_y=spacer,
        check_overlap=T,
        size=3
      )+
```

```
geom_vline(xintercept = temp_mean, linetype="dotted",
           color = "darkgreen", linewidth=1.5)+

geom_vline(xintercept = (temp_mean+temp_sd), linetype="dotted",
           color = "green", linewidth=1.5)+

geom_vline(xintercept = (temp_mean-temp_sd), linetype="dotted",
           color = "green", linewidth=1.5)+


geom_vline(xintercept = (temp_mean+(2*temp_sd)), linetype="dotted",
           color = "orange", linewidth=1.5)+

geom_vline(xintercept = (temp_mean-(2*temp_sd)), linetype="dotted",
           color = "orange", linewidth=1.5)+

geom_vline(xintercept = (temp_mean+(3*temp_sd)), linetype="dotted",
           color = "red", linewidth=1.5)+

geom_vline(xintercept = (temp_mean-(3*temp_sd)), linetype="dotted",
           color = "red", linewidth=1.5)+

annotate("text", x=(temp_mean+spacer),
         y=(max(Temp_plotset$Ranking)),
         label="MEAN", angle=90, size=5, color="darkgreen") +

annotate("text", x=(temp_mean+temp_sd-spacer),
         y=(max(Temp_plotset$Ranking)),
         label="1SD", angle=90, size=5, color="green")+

annotate("text", x=(temp_mean-temp_sd+spacer),
         y=(max(Temp_plotset$Ranking)),
         label="1SD", angle=90, size=5, color="green")+


annotate("text", x=(temp_mean+(temp_sd*2)-spacer),
         y=(max(Temp_plotset$Ranking)),
         label="2SD", angle=90, size=5, color="orange")+

annotate("text", x=(temp_mean-(temp_sd*2)+spacer),
         y=(max(Temp_plotset$Ranking)),
         label="2SD", angle=90, size=5, color="orange")+

annotate("text", x=(temp_mean+(temp_sd*3)-spacer),
         y=(max(Temp_plotset$Ranking)),
         label="3SD", angle=90, size=5, color="red")+

annotate("text", x=(temp_mean-(temp_sd*3)+spacer),
         y=(max(Temp_plotset$Ranking)),
         label="3SD", angle=90, size=5, color="red")+

labs(title=paste(DRNG))+

theme(plot.title = element_text(hjust = 0.5))+
```

```
      guides(fill= guide_legend(ncol = 1),
             color = guide_legend(override.aes = list(size = 2))
             )

    if (Temp_group=="Ridge_Notstressed"){

      ggsave(paste0(Outputdir,
              "/Drange_Theta_Ridge_NOT_stressed/","Theta","_",DRNG,".png"),
             width=20,height=8,units="in",dpi=444)

    }else if (Temp_group=="Plains_Notstressed"){

      ggsave(paste0(Outputdir,
              "/Drange_Theta_Plain_NOT_stressed/","Theta","_",DRNG,".png"),
             width=20,height=8,units="in",dpi=444)

    }else if(Temp_group=="Plains_Stressed"){

      ggsave(paste0(Outputdir,
              "/Drange_Theta_PlainStressed/","Theta","_",DRNG,".png"),
             width=20,height=8,units="in",dpi=444)

    }else if (Temp_group=="Ridge_Stressed"){
      ggsave(paste0(Outputdir,
              "/Drange_Theta_RidgeStressed/","Theta","_",DRNG,".png"),
             width=20,height=8,units="in",dpi=444)
    }
  }#End of inner loop
}#End of main loop plotting P80s
#Logic to subset graphics into the chosen directory===========================
Stations_For_Review<-as.vector(unlist(
                      Class1_ss%>%dplyr::distinct(STATION)
                      ))

Stn_permutation_4rvw<-c()
pos2=0
for(stn in Stations_For_Review){
  pos2=pos2+1

  toprng<-gsub(pattern = "-",replacement = "_",drange_decision_manual)
  Stn_permutation_4rvw[pos2]<-paste0(stn,"_",toprng)
}
#-------------------------------------------------------------------------------
for (pngdir in Directories_l_hist){

  Q_hydro<-base::grepl("Hydrographs",pngdir,ignore.case = TRUE)

# Moves the .png images from a provided folder to a folder of your
# choosing.
  if (Q_hydro==FALSE){
    file.copy(from =
            paste0(pngdir,Stn_permutation_4rvw,".png"),

            to = paste0(Outputdir,"/",Stn_permutation_4rvw,".png"))
```

```
  }else{
    file.copy(from =
                paste0(pngdir,Stn_permutation_4rvw,".png"),

              to = paste0(Outputdir,"/Hydrographs/",
                          Stn_permutation_4rvw,".png"))
  }
}
```

```
ZetaCalcIntegrals_EMT2024.R
#================================================================================
# Script Name: ZetaCalcIntegrals_EMT2024.R
# Current Location:
# \\ad.sfwmd.gov\dfsroot\data\wsd\SUP\proj\CFWI_WetlandStress\Update2023\
# Script_N_Products\ZetaCalcIntegrals_EMT2024.R
#
# Original Script Name: ZetaCalcIntegrals.R
# Original Location: \\ad.sfwmd.gov\dfsroot\data\wsd\SUP\proj\CFWI_WetlandStress
# \Update2018\ZetaCalcIntegrals.R
#================================================================================
#================================================================================
# Evaluate Wetland Stress criteria to compute Zetas
#            using Integral functions for Probable Change in Stressed Acres.
#
# Created by Kevin A. Rodberg - February 2019
#
#            zetaModels generated by ZetaCalcIntegrals.R (this script) are used
#            by P80headDiffProbabilities.R to create cell by cell probability matrix
of
#   change in wetland stress and calculates the probable change in acres by
#   wetland type (ridge or plain) from stressed to unstressed and from
#   unstressed to stressed.
#================================================================================
# Modified by: Jose Grisales
# Modified on: 03/05/2024
# Modifications denoted by: #JG
#--
#   package management:
#     provide automated means for first time use of script to automatically
#       install any new packages required for this code, with library calls
#       wrapped in a for loop.
#--
pkgChecker <- function(x){
  for( i in x ){
    if( ! require( i , character.only = TRUE ) ){
      install.packages( i , dependencies = TRUE )
      require( i , character.only = TRUE )
    }
  }
}

list.of.pkgs <-  c("readr",
                   "dplyr",
                   "zoo",
                   "ggplot2",
                   "reshape2",
                   "data.table",
                   "future",
                   "listenv",
                   "readxl",
                   "purrr",
                   "e1071" ,
                   "rcompanion",
                   "tictoc",
```

```
                   "tcltk")

suppressMessages(pkgChecker(list.of.pkgs))
#Functions===============================================================================
makeQQplots <- function(oneTest, ranks, stress, phys) {
  filename = paste0('./QQplots/QQplot',stress,phys,ranks, '.png')
  png(filename)
  qqnorm(oneTest[,2],
         main= paste("Class 1 ",phys, " Wetlands",stress,'\n', ranks, '\n',
                     format(Sys.time(), "%a %b %d %X %Y")))
  qqline(oneTest[,2],col=2,qtype=2)
  dev.off()
}


plotPDF <- function (filename,wetLData, Mean,SD , phys, stress) {
  graphics.off()
  subtitleString <-paste0("for ",stress,' ',phys,
                          " as a function of Hydrologic Index ")
  ggplot(data=wetLData, aes(x=theta)) +
    xlab(expression(paste("Hydrologic Index ", theta, " feet"))) +
    ylab("Probability Density") +
    stat_function(fun=dnorm, args = list(mean=Mean, sd=SD))+
    theme(legend.position="bottom") +
    # xlim(-10, 20) +
    scale_x_continuous(breaks = c(seq(-10,20,2.5)), limits = c(-10,20)) +
    # labs(title =expression(atop("Fitted Normal Distribution Probability
    #Density Function", bquote(.(subtitleString)~ {Delta*theta},")"))))
    labs(title ="Fitted Normal Distribution Probability Density Function",
         subtitle= bquote(~ .(subtitleString) ~  theta))
  ggsave(filename=fileName,width=10,height=6.66,units="in",dpi=300)

}

plotComboPDF <- function (filename,wetLData, Mean,SD , Mean2, SD2 , phys) {
  graphics.off()
  subtitleString <-paste0("for ",phys," as a function of Hydrologic Index ")
  ggplot(data=wetLData, aes(x=theta,colour=stress)) +
    xlab(expression(paste("Hydrologic Index ", theta, " feet"))) +
    ylab("Probability Density") +
    stat_function(fun=dnorm, n=1000,args = list(mean=Mean, sd=SD),
                  aes(colour='Stressed'))+
    stat_function(fun=dnorm, n=1000,args = list(mean=Mean2, sd=SD2),
                  aes(colour='Not Stressed'))+


    scale_colour_manual(
      values = c("Stressed" = "red", "Not Stressed" = "green4")) +

    theme(legend.position="bottom",legend.title=element_blank()) +
    # xlim(-10, 20) +
    scale_x_continuous(breaks = c(seq(-10,20,2.5)), limits = c(-10,20)) +
    # labs(title =expression(atop("Fitted Normal Distribution Probability
    #Density Function", bquote(.(subtitleString)~ {Delta*theta},")"))))
    labs(title ="Fitted Normal Distribution Probability Density Function",
```

```
         subtitle= bquote(~ .(subtitleString) ~  theta))
  ggsave(filename=fileName,width=10,height=6.66,units="in",dpi=300)

}
#================================================================================
#   Returns stress appropriate PsiValue lookup from Wetlands Table
#   using theta and final theta (or theta+delta)
#
#   type is not key, but used to subset data enable better performance
#   with multiple processors
#================================================================================
PsiVals <- function(type, status, hydIndex) {
  val <- round(hydIndex,2)
  if (status == 'Not Stressed' & !is.na(val)) {
    retVal<-(Wetlands[Wetlands$phys == type &
               val == round(Wetlands[Wetlands$phys == type,]$theta, 2), ]$PsiU)
  }  else if (status == 'Stressed' & !is.na(val)) {
    retVal<-(Wetlands[Wetlands$phys == type &
               val == round(Wetlands[Wetlands$phys == type,]$theta, 2),]$PsiS)
  }  else  {
    retVal<-NA
  }
}
#-----------------------------------------------------------------------------
# Function used to calculate zetas Equation 12, 13, 18, 19, 20, & 21
#-----------------------------------------------------------------------------
# Equations 14, 15, & 16 (not in the code) are simplified to equation 17
# (not in the code) and zetas are assigned with equations 18, 19, 20 & 21
makeZetas <- function(phys,stress,deltas,thetaSeq) {
  z = matrix(NA,length(thetaSeq),1+length(deltas))
  z[,1] <- vdf[,1]
  for (i in seq(2,1+length(deltas))){
    psiTheta2 <-unname(unlist(vPsiVals(phys,stress,vdf[,i])))#Equation 12 and
    #13, Appendix F
    psiTheta1 <-unname(vPsiVals(phys,stress,vdf[,1]))#Equation 12 and 13,
    #Appendix F
    #Unlist not required when referencing the column directly.
    z[,i] = 1 - (psiTheta2/psiTheta1)#Equation 19, & 21, Appendix F
    z[is.nan(z[,i]) ,i] <- NA
    z[z[,i]<0,i] <- 0#Equation 18 & 20, Appendix F
    z[z[,i]>1,i] <- NA
  }

  StressZetas<- as.data.frame(cbind(phys,stress,z,
                                  Wetlands[Wetlands$phys==phys,]$Ps,
                                  Wetlands[Wetlands$phys==phys,]$Pu))
  names(StressZetas) <- c("phys","stress","theta",deltas,"Ps","Pu")
  cat(paste('Zetas Calculated for',stress, phys,'\n'))
  return(StressZetas)
}
#================================================================================
# Read pre-processed P80 data sets
#================================================================================
workdir= "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023
/Script_N_Products/Products/"
```

```
outputDIR<-tcltk::tk_choose.dir(caption="Choose Output DIR")#JG
#Chose Period of Record defined by script Optimal_RNG_finder.R
POR_interest="2015-2022" #JG
#JG--
Plains_stress<-data.table::fread(paste0(
  workdir,"Plains_Stressed_Summaries.csv"),
  header = TRUE)

Plains_NOT_stress<-data.table::fread(paste0(
  workdir,"Plains_Notstressed_Summaries.csv"),
  header = TRUE)

Ridge_Stress<-data.table::fread(paste0(
  workdir,"Ridge_Stressed_Summaries.csv"),
  header = TRUE)

Ridge_NOT_stress<-data.table::fread(paste0(
  workdir,"Ridge_Notstressed_Summaries.csv"),
  header = TRUE)
#JG--

Class1Wetlands<-data.table::fread(
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023/
  Final_class1N2s/
  Class 1 Wetlands Detailed Info 2021-2023 Reassessments FINAL 040924.csv",
  header = TRUE)

#Merging the P80s in the interest period of record------------------------------
#JG--
PS_POR<-Plains_stress[Plains_stress$drange %in%POR_interest, ]
PNS_POR<-Plains_NOT_stress[Plains_NOT_stress$drange %in%POR_interest, ]
RS_POR<-Ridge_Stress[Ridge_Stress$drange %in%POR_interest, ]
RNS_POR<-Ridge_NOT_stress[Ridge_NOT_stress$drange %in%POR_interest, ]

P80_listDT<-list(PS_POR,PNS_POR,RS_POR,RNS_POR)

AllP80<-data.table::rbindlist(P80_listDT)
#JG--
#Merging P80 data with EMT ID or DMIT data======================================
names(Class1Wetlands)[5]<-"STATION" # Column 6 is the name as encountered
#within the provided data spreadsheet

wtlnds_clss1<-unique(Class1Wetlands$STATION)

Class1P80<-dplyr::left_join(AllP80[AllP80$STATION %in% wtlnds_clss1,],
                 Class1Wetlands,
                 by=c("STATION"))#Joins the class 1 data to the P80 data.
#JG--04/11/2024
# Addition to the code for the calculation of the Wilk's Shapiro on the
# thetas.
#JG--
#==================================================================
WS_groups<-unique(Class1P80$Group)
```

```
WShap_PS<-Class1P80[Class1P80$Group==WS_groups[1],]#Plains Stressed
WShap_PNS<-Class1P80[Class1P80$Group==WS_groups[2],]#Plains Not Stressed
WShap_RS<-Class1P80[Class1P80$Group==WS_groups[3],]#Ridge Stressed
WShap_RNS<-Class1P80[Class1P80$Group==WS_groups[4],]#Ridge Not Stressed

cat(paste("Plains Stressed:",nrow(WShap_PS)))
cat(paste("Plains NOT Stressed:",nrow(WShap_PNS)))
cat(paste("Ridge Stressed:",nrow(WShap_RS)))
cat(paste("Ridge NOT Stressed:",nrow(WShap_RNS)))


cat(paste("Plain Stressed Wilk's Shapiro: \n",
          stats::shapiro.test(WShap_PS$Theta)[2]))

cat(paste("Plain NOT Stressed Wilk's Shapiro: \n",
          stats::shapiro.test(WShap_PNS$Theta)[2]))

cat(paste("Ridge Stressed Wilk's Shapiro: \n",
          stats::shapiro.test(WShap_RS$Theta)[2]))

cat(paste("Ridge NOT Stressed Wilk's Shapiro: \n",
          stats::shapiro.test(WShap_RNS$Theta)[2]))
#JG--
#Developing a data frame to hold the mean and standard deviation for
#each group (ridge stressed, plain Stressed, plain not stressed,
#ridge not stressed)
#JG--
Thetas <- as.data.frame(matrix(0, ncol = 3, nrow = 4),row.names = FALSE)

Thetas$V1<-
  c("Ridge_Stressed","Ridge_Notstressed","Plains_Stressed","Plains_Notstressed")
names(Thetas)<-c("Group","Theta_mean","Theta_SD")

Groupings_vec<- as.vector(unlist(Class1P80%>%dplyr::distinct(Group)))
#Loop is slightly different since we are working from the groupings-------------
for (grp in Groupings_vec){#JG--

  Thetas[Thetas$Group %in% grp,]$Theta_mean<- base::mean(
    Class1P80[Class1P80$Group %in% grp,]$Theta
    )

  Thetas[Thetas$Group %in% grp,]$Theta_SD<- stats::sd(
    Class1P80[Class1P80$Group %in% grp,]$Theta
    )
}#JG--
#JG, developing thetas data structure for the following functions----------
Thetas$phys<-NA
Thetas$status<-NA

Thetas[1:2,]$phys<- "Ridge"
Thetas[3:4,]$phys<- "Plain"

Thetas[c(1,3),]$status<- "Stressed"
Thetas[c(2,4),]$status<- "Not_stressed"
```

```
Thetas$Fu = NA
Thetas$Fs = NA
#Reading Class 2 data==============================================================
Class2_wl<-data.table::fread(
  file = "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023
  /Final_class1N2s/
  Class 2 Wetlands Detailed Info 2021-2023 Assessments FINAL 050224.csv",
  header = TRUE)


Tot_ridg<-nrow(Class2_wl[Class2_wl$`Physiographic Region`=="Ridge",])
Tot_plain<-nrow(Class2_wl[Class2_wl$`Physiographic Region`=="Plains",])

Tot_ridgstressed<-nrow(Class2_wl[Class2_wl$`Physiographic Region`=="Ridge" &
                                   Class2_wl$`Current Status`=="Stressed",])

Tot_plainsstressed<-nrow(Class2_wl[Class2_wl$`Physiographic Region`=="Plains" &
                                   Class2_wl$`Current Status`=="Stressed",])


Tot_ridgNOTS<-nrow(Class2_wl[Class2_wl$`Physiographic Region`=="Ridge" &
                                   Class2_wl$`Current Status`=="Not Stressed",])

Tot_plainsNOTS<-nrow(Class2_wl[Class2_wl$`Physiographic Region`=="Plains" &
                                  Class2_wl$`Current Status`=="Not Stressed",])


#Equations 2 and 3 in Appendix F.
Thetas[Thetas$phys=='Plain',]$Fs <- Tot_plainsstressed/Tot_plain
Thetas[Thetas$phys=='Plain',]$Fu <- Tot_plainsNOTS/Tot_plain
Thetas[Thetas$phys=='Ridge',]$Fs <- Tot_ridgstressed/Tot_ridg
Thetas[Thetas$phys=='Ridge',]$Fu <- Tot_ridgNOTS/Tot_ridg
#Developing integrals------------------------------------------------------------
thetaInterval = .1
thetaSeq<-seq(-20,25,thetaInterval)
deltas <- seq(-20, 12,thetaInterval)
#deltas <- seq(-15, 15,thetaInterval)
# thetaSeq<-seq(-25,25,thetaInterval)
# deltas <- seq(-20, 15,thetaInterval)
# thetaSeq<-seq(-15,15,thetaInterval)
# deltas <- seq(-15, 7,thetaInterval)

Plain<- as.data.frame(thetaSeq)
names(Plain) <-c('theta')
newColumns <-c('phys','Ppu','Ps','Pu','Pps','PpAll','PsiU','PsiS')
Plain[newColumns]<-0.0
Plain$phys <- "Plain"

Ridge<- as.data.frame(thetaSeq)
names(Ridge) <-c('theta')
Ridge[newColumns]<-0.0
Ridge$phys <- "Ridge"

Wetlands <-rbind(Plain,Ridge)
```

```
physVec= as.vector(
  unlist(Class1P80%>%dplyr::distinct(Class1P80$`Physiographic Region`))
)
#================================================================================
# dnorm function returns probability from density function at each theta value
# Equations: 4 & 5
#================================================================================
#JG----------------------------------------------------------------------------
for (grp in Groupings_vec){

  fileName = paste0(outputDIR,"/",grp,'_pdf.png')

  Physiology<-Thetas[Thetas$Group %in% grp,]$phys
  STATUS<-Thetas[Thetas$Group %in% grp,]$status


  Mean_ <- Thetas[Thetas$Group %in% grp,]$Theta_mean
  SD_   <- Thetas[Thetas$Group %in% grp,]$Theta_SD

  cat(paste(grp,'Mean =',round(Mean_,2),'StdDev=',round(SD_,4)),'\n')
#================================================================================
  if (STATUS == "Stressed"){
    Wetlands[Wetlands$phys == Physiology,]$Ps <- dnorm(
      Wetlands[Wetlands$phys == Physiology,]$theta,Mean_, SD_
      )#Equation 5, in appendix F

    plotPDF(fileName,Wetlands[Wetlands$phys == Physiology,],
            Mean_, SD_, Physiology, "Stressed")

  }else if (STATUS == "Not_stressed"){

    Wetlands[Wetlands$phys == Physiology,]$Pu <-
      dnorm((Wetlands[Wetlands$phys == Physiology,]$theta),
            Mean_, SD_)#Equation 4, in appendix F

    plotPDF(fileName,Wetlands[Wetlands$phys == Physiology,],
            Mean_, SD_, Physiology, "Not_stressed")
  }
}
#Combo PDF plots    SD , Mean2, SD2 , phys
fileName=paste0(outputDIR,"/",'Ridge_pdf.png')

plotComboPDF(fileName,
             Wetlands[Wetlands$phys == "Ridge",],
             Thetas[Thetas$Group == "Ridge_Stressed",]$Theta_mean,
             Thetas[Thetas$Group == "Ridge_Stressed",]$Theta_SD,
             Thetas[Thetas$Group == "Ridge_Notstressed",]$Theta_mean,
             Thetas[Thetas$Group == "Ridge_Notstressed",]$Theta_SD,
             "Ridge")

fileName=paste0(outputDIR,"/",'Plain_pdf.png')

plotComboPDF(fileName,
             Wetlands[Wetlands$phys == "Plain",],
             Thetas[Thetas$Group == "Plains_Stressed",]$Theta_mean,
```

```
             Thetas[Thetas$Group == "Plains_Stressed",]$Theta_SD,
             Thetas[Thetas$Group == "Plains_Notstressed",]$Theta_mean,
             Thetas[Thetas$Group == "Plains_Notstressed",]$Theta_SD,
             "Plain")
#================================================================================
# Pps and Ppu are Population-weighted contributions of stress and unstressed
# wetlands to the total population probability density of all wetlands at
# each wetland hydrologic index (theta). Equations: 6,7 & 8
#================================================================================
physVec<-as.vector(unlist(Thetas%>%dplyr::distinct(phys)))

for(phys in physVec){

  Wetlands[Wetlands$phys == phys,]$Ppu <-#Equation 6, Appendix F
    Wetlands[Wetlands$phys == phys,]$Pu*max(Thetas[Thetas$phys==phys,]$Fu)

  Wetlands[Wetlands$phys == phys,]$Pps <-#Equation 7, Appendix F
    Wetlands[Wetlands$phys == phys,]$Ps*max(Thetas[Thetas$phys==phys,]$Fs)

  Wetlands[Wetlands$phys == phys,]$PpAll <-#Equation 8, Appendix F
    Wetlands[Wetlands$phys == phys,]$Ppu + Wetlands[Wetlands$phys == phys,]$Pps
#================================================================================
# PsiU and PsiS Population-weighted Cumulative Probability. Equation 9 & 10
#================================================================================
  Wetlands[Wetlands$phys == phys,]$PsiU <- #Equation 9, Appendix F
    Wetlands[Wetlands$phys == phys,]$Ppu /Wetlands[Wetlands$phys == phys,]$PpAll

  Wetlands[Wetlands$phys == phys,]$PsiS <- #Equation 10, Appendix F
    Wetlands[Wetlands$phys == phys,]$Pps /Wetlands[Wetlands$phys == phys,]$PpAll
}

write.csv(file=paste0(outputDIR,"/",'Wetlands.csv'),Wetlands)

#--------------------------------------------------------------------------------
#   Vectorize function to work with dataframes input
#--------------------------------------------------------------------------------
vPsiVals <- Vectorize(PsiVals)

#---
# Define matrix/dataframe for initial and possible thetas
#---
vdf = c()
for (x in thetaSeq) {
  possibleThetas<- deltas+x
  vdf<-c(vdf,possibleThetas)
}

dim(vdf)<-c(length(deltas),length(thetaSeq))
vdf <- t(vdf)
vdf[vdf< min(thetaSeq)]<-NA
vdf[vdf> max(thetaSeq)]<-NA

# Add theta column to beginning
# For Plains--
vdf <-cbind(Wetlands[1:length(thetaSeq),]$theta,vdf)
```

```
#  For Ridges (uncomment)--
#vdf <-cbind(Wetlands[302:602,]$theta,vdf)

physVec = c('Ridge','Plain')
stressVec = c('Not Stressed','Stressed')
ix = 0
#--------------------------------------------------------------------------------
# Plot stress probability curves for positive and negative theta
# (Psi u and Psi s)
#--------------------------------------------------------------------------------
psiStress <-unname(unlist(vPsiVals("Plain","Stressed",vdf[,1])))
#psiStress <-unname(unlist(vPsiVals("Ridge","Stressed",vdf[,1])))

#Equation #11--
psiNotStress <-1-psiStress#Equation 11, Appendix F
#--
PsiVals4Plot<-as.data.frame(rbind(cbind(vdf[,1],"PsiS",psiStress),
                                  cbind(vdf[,1],"PsiN",psiNotStress)))

names(PsiVals4Plot)<- c('theta','variable','psiVal')
PsiVals4Plot$theta<- as.numeric(as.character(PsiVals4Plot$theta))
PsiVals4Plot$psiVal<- as.numeric(as.character(PsiVals4Plot$psiVal))
my.labs <- list(bquote(psi[u]),bquote(psi[s]))

ggplot(data=PsiVals4Plot[PsiVals4Plot$theta > -10 & PsiVals4Plot$theta < 15,],
#ggplot(data=PsiVals4Plot[PsiVals4Plot$theta > -10 & PsiVals4Plot$theta < 15,],
       aes(x=theta, y=psiVal,color=variable)) +
  theme(plot.title = element_text(size = 12,hjust = 0.5),
        plot.subtitle = element_text(size = 12, face = "bold",hjust = 0.5),
        axis.title = element_text(size=12),
        legend.title=element_text(size=12),
        legend.text=element_text(size=12)) +
  geom_line(linewidth=1) +
  labs(x=expression(paste("Hydrologic Index, ", theta, " (feet)")),
       y=expression(paste(psi[u]," & ",psi[s], " (dimensionless)")),
              # title="Probability of a Randomly Selected Ridge Wetland ",
       title="Probability of a Randomly Selected Plains Wetland ",
       subtitle=expression(paste("Being Stressed, ",
                                 psi[s]," or Not Stressed, ",psi[u] ))) +
  scale_color_manual(labels=my.labs, values = c("darkgreen", "red")) +
  theme(legend.title = element_blank())

ggsave(filename=paste0(outputDIR,"/Prob_randselec_wtl.png"),
       width=10,height=8,
       units="in",dpi=300)

plan(multisession)#If multiprocessing
data <- listenv()#If multiprocessing
#--------------------------------------------------------------------------------
#   Create zetas using multiprocessing functions
#--------------------------------------------------------------------------------
tic("Calculate Zetas")
for (phys in physVec){
  for (stress in stressVec){
    cat(paste(phys, stress, '\n'))
```

```
    ix = ix + 1
    data[[ix]] %<-% makeZetas(phys,stress,deltas,thetaSeq)
  }
}
xdata <- as.list(data)
zetas<- do.call(rbind,xdata)

zetaMelt <- data.table::melt(as.data.table(zetas),
                 id=c("phys","stress","theta","Ps","Pu"),
                 na.rm=T)#Updated with data table methods

zetaMelt <-transform(zetaMelt, theta = as.numeric(as.character(theta)))
zetaMelt <-transform(zetaMelt, delta = as.numeric(as.character(variable)))
zetaMelt <-transform(zetaMelt, value = as.numeric(value))
zetaMelt <-transform(zetaMelt, Ps = as.numeric(as.character(Ps)))
zetaMelt <-transform(zetaMelt, Pu = as.numeric(as.character(Pu)))
#--------------------------------------------------------------------------------
# calculate series of little zetas values for Big Zetas
# for population-weighted average probability of change in stress.
# Equations 22 & 23
#--------------------------------------------------------------------------------
zetaMelt$ZetaSU <- as.numeric()
#zetaMelt$ZetaSU <- NA

zetaMelt[zetaMelt$stress == 'Stressed',]$ZetaSU<- thetaInterval*
  zetaMelt[zetaMelt$stress == 'Stressed',]$value *
  zetaMelt[zetaMelt$stress == 'Stressed',]$Ps #Equation 23, Appendix F

zetaMelt$ZetaUS <- as.numeric()
# zetaMelt$ZetaUS <- NA

zetaMelt[zetaMelt$stress == 'Not Stressed',]$ZetaUS<- thetaInterval*
  zetaMelt[zetaMelt$stress == 'Not Stressed',]$value *
  zetaMelt[zetaMelt$stress == 'Not Stressed',]$Pu #Equation 22, Appendix F

toc()
#--------------------------------------------------------------------------------
# Calculate Probability of Change as a function of delta theta
# Big Z for Not Stressed Ridge and Plain.
#--------------------------------------------------------------------------------
# zetaMelt=as.data.frame(zetaMelt)

BigZ<-aggregate(zetaMelt[zetaMelt$stress=='Not Stressed',]$ZetaUS,
                list(delta=zetaMelt[zetaMelt$stress=='Not Stressed',]$delta,
                     phys = zetaMelt[zetaMelt$stress=='Not Stressed',]$phys,
                     stress = zetaMelt[zetaMelt$stress=='Not Stressed',]$stress
                ),sum, na.rm=T)

ZRPu_sNeg <- lm(x ~ poly(delta,9),
                data=BigZ[BigZ$phys=='Ridge' & BigZ$delta <= 0,])

ZRPu_sPos <- lm(x ~ poly(delta,9),
                data=BigZ[BigZ$phys=='Ridge' & BigZ$delta >= 0,])

ZPPu_sNeg <- lm(x ~ poly(delta,10),
```

```
                data=BigZ[BigZ$phys=='Plain' & BigZ$delta <= 0,])

ZPPu_sPos <- lm(x ~ poly(delta,9),
                data=BigZ[BigZ$phys=='Plain' & BigZ$delta >= 0,])
polynomData <-NULL
#--------------------------------------------------------------------------------
# Calculate probability change curves for positive and negative delta theta
#   for initially unstressed Plains wetlands
#--------------------------------------------------------------------------------
x <-data.frame(delta=(seq(min(BigZ$delta),0, .01)))
x$pred1 <- predict(ZRPu_sNeg,x)
newdata <-data.frame(delta=(seq(0,max(BigZ$delta), .01)))
newdata$pred1 <- predict(ZRPu_sPos,newdata)
newdata <-rbind(x,newdata)
polynomData <-newdata
setnames(polynomData, "pred1", "ZRPu")
#-----------------------------------------------------------------------------
#   ...And for initially unstressed Ridge wetlands
#-----------------------------------------------------------------------------
x <-data.frame(delta=(seq(min(BigZ$delta),0, .01)))
x$pred1 <- predict(ZPPu_sNeg,x)
newdata <-data.frame(delta=(seq(0,max(BigZ$delta), .01)))
newdata$pred1 <- predict(ZPPu_sPos,newdata)
newdata <-rbind(x,newdata)
polynomData<- merge(polynomData,newdata)
setnames(polynomData, "pred1", "ZPPu")
#--------------------------------------------------------------------------------
# Calculate Probability of Change as a function of delta theta
#   Big Z for Stressed Ridge and Plain
#--------------------------------------------------------------------------------
BigZ<-aggregate(zetaMelt[zetaMelt$stress=='Stressed',]$ZetaSU,
                list(delta=zetaMelt[zetaMelt$stress=='Stressed',]$delta,
                     phys = zetaMelt[zetaMelt$stress=='Stressed',]$phys,
                     stress = zetaMelt[zetaMelt$stress=='Stressed',]$stress
                ),sum, na.rm=T)

ZRPs_uNeg <- lm(x ~ poly(delta,9),
                data=BigZ[BigZ$phys=='Ridge' & BigZ$delta <= 0,])

ZRPs_uPos <- lm(x ~ poly(delta,9),
                data=BigZ[BigZ$phys=='Ridge' & BigZ$delta >= 0,])

ZPPs_uNeg <- lm(x ~ poly(delta,10),
                data=BigZ[BigZ$phys=='Plain' & BigZ$delta <= 0,])

#ZPPs_uNeg <- lm(x ~ poly(delta,9),
#                data=BigZ[BigZ$phys=='Plain' & BigZ$delta <= 0,])

ZPPs_uPos <- lm(x ~ poly(delta,9),
                data=BigZ[BigZ$phys=='Plain' & BigZ$delta >= 0,])
#--------------------------------------------------------------------------------
# Calculate probability change curves for positive and negative delta theta
#   for initially stressed Plains wetlands
#--------------------------------------------------------------------------------
x <-data.frame(delta=(seq(min(BigZ$delta),0, .01)))
```

```
x$pred1 <- predict(ZRPs_uNeg,x)
newdata <-data.frame(delta=(seq(0,max(BigZ$delta), .01)))
newdata$pred1 <- predict(ZRPs_uPos,newdata)
newdata <-rbind(x,newdata)
polynomData<- merge(polynomData,newdata)
setnames(polynomData, "pred1", "ZRPs")
#---------------------------------------------------------------------------
#   ...And for initially unstressed Ridge wetlands
#---------------------------------------------------------------------------
x <-data.frame(delta=(seq(min(BigZ$delta),0, .01)))
x$pred1 <- predict(ZPPs_uNeg,x)
newdata <-data.frame(delta=(seq(0,max(BigZ$delta), .01)))
newdata$pred1 <- predict(ZPPs_uPos,newdata)
newdata <-rbind(x,newdata)
polynomData<- merge(polynomData,newdata)
setnames(polynomData, "pred1", "ZPPs")
#------------------------------------------------------------------------------
# Plot probability change curves for positive and negative delta theta
#------------------------------------------------------------------------------
polynomData$delta = as.character(polynomData$delta)

#JG--Updated with data table methods
longPolynom <- data.table::melt(as.data.table(polynomData),id.vars=c("delta"))

longPolynom$delta <- as.numeric(longPolynom$delta)

names(longPolynom) <- c('delta','Category','Zeta')

levels(longPolynom$Category)[match("ZRPu",levels(longPolynom$Category))] <-
  "Ridge Adverse Chg"

levels(longPolynom$Category)[match("ZRPs",levels(longPolynom$Category))] <-
  "Ridge Beneficial Chg"

levels(longPolynom$Category)[match("ZPPu",levels(longPolynom$Category))] <-
  "Plain Adverse Chg"

levels(longPolynom$Category)[match("ZPPs",levels(longPolynom$Category))] <-
  "Plain Beneficial Chg"

theta = expression(theta)
text4Title<-paste0("Population-weighted Average Probability of Change\n",
                   "as a Result of an Imposed Change in Hydrologic Index(",
                   expression(theta),")")

for (cat in levels(longPolynom$Category)){
  if (length(which(longPolynom[longPolynom$Category == cat &
                              longPolynom$delta <= 0.00 ,]$Zeta> .999))>0) {
    cat(paste(cat, 'Zeta > .9999 \n'))
    longPolynom[
      longPolynom$Category == cat & longPolynom$delta < 0.0 &
      longPolynom$delta <= max(longPolynom[longPolynom$Category == cat &
      longPolynom$Zeta > .999 &
      longPolynom$delta < 0,]$delta,na.rm = T),]$Zeta <- .99999999999999
  }
```

```
  if (length(which(longPolynom[
  longPolynom$Category == cat &
  longPolynom$delta <= 0.00,]$Zeta < .00000001 ))>0){

      cat(paste(cat, 'Zeta < .00000001 \n'))
      longPolynom[longPolynom$Category == cat &
        longPolynom$Zeta < .00000001 &
        longPolynom$delta <= 0.0 &
        longPolynom$delta >= min(
          longPolynom[longPolynom$Category ==
          cat & longPolynom$Zeta < .00000001 &
          longPolynom$delta <=0.0,]$delta,na.rm = T),]$Zeta <- .00000001
  }
  if (length(which(longPolynom[longPolynom$Category == cat &
                             longPolynom$delta >= 0.00 ,]$Zeta> .999))>0){

    cat(paste(cat, 'Zeta > .9999 \n'))
    longPolynom[longPolynom$Category == cat &
      longPolynom$Zeta > .999 &
      longPolynom$delta >= 0.0 &
      longPolynom$delta > min(
        longPolynom[longPolynom$Category == cat & longPolynom$Zeta > .999 &
        longPolynom$delta >0,]$delta,na.rm = T),]$Zeta <- .99999999999999
  }
  if (length(which(longPolynom[longPolynom$Category == cat &
  longPolynom$delta >= 0.00 ,]$Zeta < .00000001 ))>0){

    cat(paste(cat, 'Zeta < .00000001 \n'))
    longPolynom[longPolynom$Category == cat &
      longPolynom$Zeta < .00000001 &
      longPolynom$delta >=0.0 &
      longPolynom$delta <= min(
        longPolynom[longPolynom$Category == cat & longPolynom$Zeta < .00000001 &
        longPolynom$delta >= 0.0,]$delta,na.rm = T),]$Zeta <- .00000001
  }
}

longPolynom[longPolynom$Zeta <0,]$Zeta<- 0.000000001

ggplot(data=longPolynom, aes(x=delta, y=Zeta, color=Category)) +
  theme(plot.title = element_text(size = 14, face = "bold"),
        axis.title = element_text(size=12),
        legend.title=element_text(size=12),
        legend.text=element_text(size=12)) +
  geom_line(linewidth=2) +
  xlab(expression(paste("Change in Hydrologic Index ", Delta, theta, " feet")))+
  theme(legend.position="bottom")+
  scale_x_continuous(breaks = c(seq(-21,15,3)))+

  labs(title =expression(atop(
    "Population-weighted Average Probability of Change",paste(
      "as a Result of an Imposed Change in Hydrologic Index (",
      {Delta*theta},")"))))
```

```
ggsave(filename=paste0(outputDIR,"/Pop_weightedAVG_probchang.png"),
       width=10,height=8,
       units="in",dpi=300)

zetaModels=list(ZRPu_sNeg=ZRPu_sNeg,ZRPu_sPos=ZRPu_sPos,
                ZPPu_sNeg=ZPPu_sNeg,ZPPu_sPos=ZPPu_sPos,
                ZRPs_uNeg=ZRPs_uNeg,ZRPs_uPos=ZRPs_uPos,
                ZPPs_uNeg=ZPPs_uNeg,ZPPs_uPos=ZPPs_uPos)

saveRDS(zetaModels, paste0(outputDIR,"/zetaModels.RDS"))

write.csv(file=paste0(outputDIR,'/polynomData.csv'),polynomData,row.names=FALSE)

write.csv(file=paste0(outputDIR,'/Zetas.csv'),zetas,row.names=FALSE)
write.csv(file=paste0(outputDIR,'/ZetasMelt.csv'),zetaMelt)
write.csv(file=paste0(outputDIR,'/Wetlands.csv'),Wetlands)

#Optional write outs--------------------------------------------------------------
#wideTheta <- dcast(thetas,EMT_ID~rank,value.var='theta',mean)
#thetaEval <- merge(wideTheta,Class1P80[,c(1,3,4,5,11)], by.x='EMT_ID',
#by.y = "CFCA/EMT ID")
#write.csv(file=paste0(workdir,'/thetas4Eval.csv'),thetaEval)
```

P80headDifference_EMT2024.R

```
#==============================================================================
# R:\ModflowBinary\P80headDifference.R
#------------------------------------------------------------------------------
# Beginning of P80 Modflow Heads
#
# Created by Kevin A. Rodberg - February 2019
#
# Purpose: Create difference matrix of p80 Reference Condition Heads
#          minus another P80 Simulation Heads from Layer 1 and
#          the specified stress periods (POR) from Modflow runs using
# makes use of by R tools for Modflow:
#      rModflow::readHeadsbinByLay
#         from install_github("KevinRodberg/rModflow")

#Modified by: Jose O Grisales, 06/10/2024
# Only changed the default path to the binary model outputs.
#==============================================================================
# source:
# //ad.sfwmd.gov/dfsroot/data/wsd/SUP/devel/source/R/ModflowBinary/P80heads.R
#==============================================================================
#--
#   package management:
#     provide automated means for first time use of script to automatically
#       install any new packages required for this code, with library calls
#       wrapped in a for loop.
#--
pkgChecker <- function(x){
  for( i in x ){
    if( ! require( i , character.only = TRUE ) ){
      install.packages( i , dependencies = TRUE )
      require( i , character.only = TRUE )
    }
  }
}

list.of.packages <-c( "data.table",
                      "devtools",
                      "utils",
                      "githubinstall",
                      "tcltk2",
                      "rModflow",
                      "future.apply",
                      "future",
                      "listenv",
                      "rasterVis",
                      "sp",
                      "maptools",
                      "rgeos","raster",
                      "ggplot2","RColorBrewer","tictoc","polynom")

suppressWarnings(pkgChecker(list.of.packages))
new.packages <-
  list.of.packages[!(list.of.packages %in% installed.packages()[,"Package"])]
```

```
if ("rModflow" %in% new.packages) devtools::install_github(
  "KevinRodberg/rModflow")lapply(list.of.packages,require, character.only=TRUE)

source("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/devel/source/
       R/ReusableFunctions/tclFuncs.R")

message <- "Do you want to use the same binary heads selections?\n"
skip <- FALSE
if(exists('RCheadsFile') & exists('SIMheadsFile')){
  if(file.exists(RCheadsFile) & file.exists(SIMheadsFile) ){
    if (utils::askYesNo(paste(message,RCheadsFile,'\n',SIMheadsFile,'\n'),
                        prompts = getOption("askYesNo",
                                  gettext(c("Yes", "No", "Cancel"))))){
      cat('Bypassing data selections \n')
      skip <- TRUE
    }
  }
}
if (!skip){
  #=================================================================
  # Choose Modflow Model to be processed via GUI
  # such as ECFTX, NPALM, LWCSIM, etc
  #=================================================================
  MFmodel.Params <- defineMFmodel()
  model <- chooseModel()
  M <- as.data.frame(MFmodel.Params[model,])

  #=================================================================
  # Select first Modflow Binary Heads file to process
  #=================================================================
  winA <- tktoplevel()
  msg = paste('[REF CONDITION]  Identify Binary Heads file for :', model)
  lbl.message <- tk2label(winA, text = msg, font = fontHeading)
  tkgrid(lbl.message, padx = 30)
  tkraise(winA)
  MFmodel.Params[model,]$mpath <-
    '//ad.sfwmd.gov/dfsroot/data/hpcc_shared/krodberg/CFWI/*.*'

  mpath <- toString(MFmodel.Params[model,]$mpath)
  RCheadsFile<-choose.files(default=mpath)
  tkdestroy(winA)

  if (length(RCheadsFile) == 0) {
    exit("User cancelled HeadsFile choice")
  }
  #=================================================================
  # Select second Modflow Binary Heads file to process
  #=================================================================
  winA <- tktoplevel()
  msg = paste('[SIM CONDITION] Identify Binary Heads file for :', model)
  lbl.message <- tk2label(winA, text = msg, font = fontHeading)
  tkgrid(lbl.message, padx = 30)
  tkraise(winA)
  MFmodel.Params[model,]$mpath <-
    '//ad.sfwmd.gov/dfsroot/data/hpcc_shared/krodberg/CFWI/*.*'
```

```
  mpath <- toString(MFmodel.Params[model,]$mpath)
  SIMheadsFile<-choose.files(default=mpath)
  tkdestroy(winA)

  if (length(RCheadsFile) == 0 || length(SIMheadsFile) ==0) {
    exit("User cancelled HeadsFile choices")
  }
#==================================================================
# Estimate number of stress periods in Heads file
#==================================================================
  fileSz1 <- file.info(RCheadsFile)$size
  fileSz2 <- file.info(SIMheadsFile)$size
  fileSz <- min(fileSz1,fileSz2)
  TtlStrPd = fileSz / ( M$nlays * ((M$ncols * M$nrows * 4) + 44))
#==================================================================
# Define range of Stress Periods to read
#==================================================================
  SP_rng <- readRange()
  if (max(SP_rng) > TtlStrPd || min(SP_rng) < 1) {
    exit('Out of Range')
  }
}
#==================================================================
# Retrieve Heads for Layer1 from
# Reference Condition (RC) and Simulation (SIM) Runs
# 2 files are read in asyncronously using the future package
#==================================================================
if (is.null(MFLay)){
  MFLay <-1
}
maxSP <- as.integer(TtlStrPd)
plan(multisession)
processed= listenv(NULL)
#=====================================================================
# tic() Initiates stacked timers and and toc() echos elapsed time
#=====================================================================
tic("Modflow Binary Heads Data Processing")
tic("Heads Retrieval")
cat(paste("Initiating call to readHeadsbinByLay for Layer ",
          MFLay, " as Reference ",
          "Condition  [+]\nwith input from ", RCheadsFile, '\n'))
processed[[1]] <- future({readHeadsbinByLay(RCheadsFile,
                                            MFLay, maxSP)})

cat(paste("Initiating call to readHeadsbinByLay for Layer ",
          MFLay, " as Model Simulation ",
          "of Interest  [:]\nwith input from ", SIMheadsFile, '\n'))
processed[[2]] <- future({readHeadsbinByLay(SIMheadsFile,
                                            MFLay, maxSP)})

#=====================================================================
# Wait for values from future with progress indicators
#=====================================================================
cat(paste('Waiting for background processing to complete','\n'))
```

```
while (!resolved(processed[[1]])){
  if (!resolved(processed[[2]])){
    cat("+")
  }
  cat(":")
}
cat("\n")
#=====================================================================
# Reformat Layer1 as 3D array using col, row, StressPeriod dimensions
#=====================================================================
Layer1RC2d <- array(future::value(processed[[1]]),c(M$ncols,M$nrows,maxSP))
Layer1SIM2d<- array(future::value(processed[[2]]),c(M$ncols,M$nrows,maxSP))
toc()

#=====================================================================
# Process P80 calculations for each model cell in parallel
#=====================================================================
tic("P80 Calculations")
cat(paste('Initiating Percentile rank calculations','\n'))

qRC <- future_apply (Layer1RC2d,MARGIN=c(1,2),
                    FUN=stats::quantile,probs=c(.2),na.rm=T)
qSIM <- future_apply (Layer1SIM2d,MARGIN=c(1,2),
                     FUN=stats::quantile,probs=c(.2),na.rm=T)

toc()
toc()
```

```
P80headDiffProbabilities_EMT2024.R
#===============================================================================
# R:/ModflowBinary/P80headDiffProbabilities.R
#===============================================================================
#===============================================================================
# Beginning of P80 Head Difference evaluation for Probable Change
# in Stressed Acres.
#
# Created by Kevin A. Rodberg - February 2019
#
# Purpose: Uses 2 matrices returned by P80headDifference_EMT2024
#          (Original name: P80headDifference.R),
#          imports csvfiles of wetland point locations, and probability
#          calculation data [zetaModels generated by ZetaCalcIntegrals.R].
#          Creates cell by cell probability matrix of change in
#          wetland stress and calculates the probable change in acres
#          by wetland type (ridge or plain) from stressed to unstressed and
#          from unstressed to stressed.
#===============================================================================
#--
#   package management:
#     provide automated means for first time use of script to automatically
#       install any new packages required for this code, with library calls
#       wrapped in a for loop.
#--
pkgChecker <- function(x){
  for( i in x ){
    if( ! require( i , character.only = TRUE ) ){
      install.packages( i , dependencies = TRUE )
      require( i , character.only = TRUE )
    }
  }
}

list.of.packages <-c( "data.table","devtools","utils","githubinstall",
                      "tcltk2","rModflow","future.apply","future","listenv",
                      "rasterVis","sp","maptools","rgeos","raster",
                      "ggplot2","RColorBrewer","tictoc","dplyr","polynom")

suppressWarnings(pkgChecker(list.of.packages))

new.packages <- list.of.packages[!(
  list.of.packages %in% installed.packages()[,"Package"])]

if ("rModflow" %in% new.packages) devtools::install_github(
  "KevinRodberg/rModflow")lapply(list.of.packages,require, character.only=TRUE)

options(warn=-1)
#Chose output Dir--------------------------------------------------------------
Out_Dir<-tcltk::tk_choose.dir(default=
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
  Update2023/Script_N_Products/")

Out_Dir<-paste0(Out_Dir,"/")
#-------------------------------------------------------------------------------
```

```
# Provides GUI to choose model
# - may not be needed any long in this code since its used in
# P80headDifference.R
#--------------------------------------------------------------------------------
source ("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/devel/source/R/
  ReusableFunctions/tclFuncs.R")
#source ("./ECFTX/tclFuncs.R")

plan(multisession)
ip=0
lowQuantile = 999
hiQuantile = -999
pltGrphs <- listenv(NULL)
probReturn <- listenv(NULL)
#================================================================================
tic('Process one layer')
#================================================================================
#--------------------------------------------------------------------------------
#  Code provides option to not reread very large files
#  MFLay <- NULL is an easy way to force P80headDifference to start
#--------------------------------------------------------------------------------
if (!exists('Layer1SIM2d') | !exists('MFLay')){
  MFLay <- 1
  #source ("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/devel/source/
  #R/ModflowBinary/P80headDifference.R")
  source ("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
          Update2023/Script_N_Products/P80headDifference_EMT2024.R")
}else{
  if(!(utils::askYesNo(paste("Do you want to use layer ",MFLay,
                             " from the previous binary heads data?"),
                       prompts = getOption("askYesNo",
                                           gettext(c("Yes", "No", "Cancel"))
                                           )
                       )
       )
     ){
        if (MFLay == 1){
          MFLay <- 3
        }else {
          MFLay <-1
        }
        #source ("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/devel/source/R/
        #ModflowBinary/P80headDifference.R")
        source ("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/
                Update2023/Script_N_Products/P80headDifference_JG.R")
      }
}
#================================================================================
tic('Create Differences from P80 Heads Layers')
#================================================================================
#dataPath <-
#'//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2018'
dataPath <-
  '//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023'
DiffLay %<-% (qRC - qSIM)
```

```
#Hint: If I subtract from this difference I get Stressed Wetlands Recovering
#DiffLay <- (qSIM - qRC) -1.5
#-------------------------------------------------------------------------------
#   Calculate mean water level layers simultaneously
#-------------------------------------------------------------------------------
avgRC %<-% future_apply (Layer1RC2d,MARGIN=c(1,2),FUN=mean,na.rm=T)
avgSIM %<-%future_apply (Layer1SIM2d,MARGIN=c(1,2),FUN=mean,na.rm=T)
#-------------------------------------------------------------------------------
#   Calculate a mean difference water level layer
#-------------------------------------------------------------------------------
HdDif <- avgRC-avgSIM
#===============================================================================
# Finished Creating Differences from P80 Heads Layers
#===============================================================================
toc()
#===============================================================================
tic('GIS overhead')
#===============================================================================
cat('Developing GIS data sets for raster plots \n')

#-------------------------------------------------------------------------------
# NAD83 HARN State Plane Florida East FIPS 0901 Feet
#-------------------------------------------------------------------------------
# HARNSP17ft  = sp::CRS("+init=epsg:2881")

#NAD_1983_HARN_StatePlane_Florida_East_FIPS_0901_Feet
wkt <- sf::st_crs(2881)[[2]]
HARNSP17ft=sp::CRS(wkt)#Revised 03/26/2024
#-------------------------------------------------------------------------------

latlongs = CRS("+proj=longlat +datum=WGS84")
#-------------------------------------------------------------------------------
# Set up county boundary shapefile for overlay
# on raster maps
#-------------------------------------------------------------------------------
gClip <- function(shp, bb) {
  if (class(bb) == "matrix")
    b_poly <- as(extent(as.vector(t(bb))), "SpatialPolygons")
  else
    b_poly <- as(extent(bb), "SpatialPolygons")
  rgeos::gIntersection(shp, b_poly, byid = T)
}
#Correct path confirmed by Kevin Rodberg 04/22/2024
WMDbnd.Path <- "//ad.sfwmd.gov/dfsroot/data/hpcc_shared/krodberg/NexRadTS"
WMDbnd.Shape <- "CntyBnds"

CFWIbnd.Path <-#Correct path confirmed by Kevin Rodberg 04/22/2024
  "//ad.sfwmd.gov/dfsroot/data/wsd/GIS/GISP_2012/DistrictAreaProj/CFWI/Data"
CFWIbnd.Shape <- "CFWI_Boundary"

#Correct path confirmed by Kevin Rodberg 04/22/2024
physio.Path <-paste0("//ad.sfwmd.gov/dfsroot/data/wsd/GIS/GISP_2012/",
                "References/FDEP/Richardson_Sept2012/PhysiograhicProvinces")
```

```
physio.shape <- "PHYSIOGRAPHIC_PROVINCES"

SomeLakes.Path <- paste0(#Correct path confirmed by Kevin Rodberg 04/22/2024
  "//ad.sfwmd.gov/dfsroot/data/wsd/GIS/GISP_2012/DistrictAreaProj/",
    "ECFT/Data/Waterbodies")

SomeLakes.shape <- "Lakecells_Dissolve"

WMDbnd %<-% rgdal::readOGR(dsn=WMDbnd.Path,layer=WMDbnd.Shape,verbose=FALSE)
CFWIbnd %<-% rgdal::readOGR(dsn=CFWIbnd.Path,layer=CFWIbnd.Shape,verbose=FALSE)
physiobnd %<-% rgdal::readOGR(dsn=physio.Path,layer=physio.shape,verbose=FALSE)

SomeLakes %<-% rgdal::readOGR(
  dsn=SomeLakes.Path,layer=SomeLakes.shape,verbose=FALSE)

WMDbnd <- sp::spTransform(WMDbnd,CRS=HARNSP17ft)
CFWIbnd <- sp::spTransform(CFWIbnd,CRS=HARNSP17ft)
physiobnd <- sp::spTransform(physiobnd,CRS=HARNSP17ft)
SomeLakes <- sp::spTransform(SomeLakes,CRS=HARNSP17ft)
#===============================================================================
# Finished GIS overhead
#===============================================================================
toc()
#===============================================================================
tic('Develop rasters')
#===============================================================================
#-------------------------------------------------------------------------------
# calculate number of rows and columns
#-------------------------------------------------------------------------------
res=MFmodel.Params[model,]$res
xmin=MFmodel.Params[model,]$xmin
ymin=MFmodel.Params[model,]$ymin
rasRows=MFmodel.Params[model,]$nrows
rasCols=MFmodel.Params[model,]$ncols
xmax=xmin+(res*rasCols)
ymax=ymin+(res*rasRows)

cellsize=c(res,res)
ras <- raster::raster(res=cellsize,
                      xmn=xmin,
                      xmx=xmax,
                      ymn=ymin,
                      ymx=ymax,crs=HARNSP17ft)
#-------------------------------------------------------------------------------
# define raster and map extents using MFmodel data extents
#-------------------------------------------------------------------------------
rasExt <- raster::extent(ras)
clpBnds2 <- gClip(WMDbnd, ras)
#-------------------------------------------------------------------------------
# Create raster plot of the DiffMatrix
#   note: t() is used to transpose the array axis for plotting
#-------------------------------------------------------------------------------
diffRas<-raster::raster(t(DiffLay[,]),rasExt[1:4], crs=HARNSP17ft)

diffRas <- raster::crop(diffRas, extent(buffer(CFWIbnd,width=10000)))
```

```
diffRas %<-% raster::mask(diffRas, CFWIbnd)

title = paste("Change in Head Layer ",MFLay,": \n",
              RCheadsFile, '\nminus\n',SIMheadsFile)

basePath <- paste0("//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/",
              "CFWI_WetlandStress/Update2023/Script_N_Products/
               Products/ProbDiff80/")

filename = paste0(Out_Dir,'p80headDiffLay',MFLay,'.tif')
ip=ip+1

pltGrphs[[ip]] <- future({
  raster::writeRaster(diffRas, filename, format="GTiff", overwrite=TRUE)
})

lowQuantile = min(lowQuantile,quantile(DiffLay,probs=c(.03),na.rm=T),na.rm=T)
hiQuantile = max(hiQuantile,quantile(DiffLay,probs=c(.97),na.rm=T),na.rm=T)
my.at = c(quantile(DiffLay,probs=c(.00001),na.rm=T),
          -2.5,-2.0,-1.5,-1.25,-1.0,-.75,-.5,-.25,-.2,-.15,-.1,-.05,0.0,
          .05,.1,.15,.2,0.25,0.50,0.75,1.0,1.25,1.5,2.0,2.5,
          quantile(DiffLay,probs=c(.99999),na.rm=T))

Class1.Wetland.Info <-
#read.csv(paste0(dataPath,"/Class 1 Wetland Info for Analysis ALLv1.csv"))
read.csv(paste0(dataPath,
  "/Final_class1N2s/
  Class 1 Wetlands Detailed Info 2021-2023 Reassessments FINAL 040924.csv"))
#Removing white spaces-----------------------------------------------------
Class1.Wetland.Info$EM.Working.Group.ID<-
  trimws(Class1.Wetland.Info$EM.Working.Group.ID,
         which = c("right"), whitespace = "[ \t\r\n]")

c1Wtl.pnts <-
  sp::SpatialPointsDataFrame(
    Class1.Wetland.Info[,31:32],Class1.Wetland.Info,#XY, (Longitude,Latitude)
      proj4string=latlongs)#Is it provided in WSG84 04/22/2024

c1Wtl.pnts <- sp::spTransform(c1Wtl.pnts,HARNSP17ft)

filename=paste0(Out_Dir,"Lay",MFLay,"_P80HeadDifference.png")
WLTheme = rasterTheme(region =rev(brewer.pal('BrBG', n = 9)))
options(scipen=7)
myplot= (levelplot(diffRas,par.settings = WLTheme,at=my.at,main=title)+
           latticeExtra::layer(sp.points(c1Wtl.pnts, pch = 20,col = "black"))+

           latticeExtra::layer(sp.text(coordinates(c1Wtl.pnts),
              txt=c1Wtl.pnts$EM.Working.Group.ID,pos=1,cex=.5 ))+

           latticeExtra::layer(sp.polygons(clpBnds2, col='darkgray'))+
           latticeExtra::layer(sp.polygons(physiobnd, col='brown'))+
           latticeExtra::layer(sp.polygons(SomeLakes, col='gray'))+
           latticeExtra::layer(sp.polygons(CFWIbnd, col='red'))
)
trellis.device(device="png", filename=filename, width=4500,height=4500,
```

```
                units="px",res=300)
print(myplot)
dev.off()
#---
# Convert array layers to rasters
#---
qRCras %<-% raster::raster(t(qRC[,]),rasExt[1:4], crs=HARNSP17ft)
qSIMras %<-% raster::raster(t(qSIM[,]),rasExt[1:4], crs=HARNSP17ft)
RCras %<-% raster::raster(t(avgRC[,]),rasExt[1:4], crs=HARNSP17ft)
SIMras %<-% raster::raster(t(avgSIM[,]),rasExt[1:4], crs=HARNSP17ft)
HdDifras %<-% raster::raster(t(HdDif[,]),rasExt[1:4], crs=HARNSP17ft)

qRCras[qRCras > 900]<-NA
RCras[RCras > 900]<-NA
qSIMras[qSIMras> 900 ]<-NA
SIMras[SIMras> 900 ]<-NA
#---
#  Function to create maps as png and tif from rasters
#---
plotTiffAndPng <- function(ras2Plot,rasName){
  ras2Plot[ras2Plot > 900] <- NA
  Rng = max(abs(quantile(ras2Plot,probs=c(.00001),na.rm=T)),
            abs(quantile(ras2Plot,probs=c(.99999),na.rm=T)))
  interval = Rng/10
  my.at = c(seq(-Rng,Rng,interval))

    filename = paste0(Out_Dir,rasName,MFLay,'.tif')
  writeRaster(ras2Plot, filename, format="GTiff", overwrite=TRUE)

  filename = paste0(Out_Dir,rasName,MFLay,'.png')
  title =paste0(rasName,MFLay)

  myplot= (levelplot(ras2Plot,par.settings = WLTheme,at=my.at, main = title)+
             latticeExtra::layer(sp.polygons(clpBnds2, col='darkgray'))+
             latticeExtra::layer(sp.polygons(physiobnd, col='brown'))+
             latticeExtra::layer(sp.polygons(SomeLakes, col='blue'))+
             latticeExtra::layer(sp.polygons(CFWIbnd, col='red')))

  trellis.device(device="png", filename=filename, width=3000,height=4500,
                 units="px",res=300)
  print(myplot)
  dev.off()
}

ip=ip+1
pltGrphs[[ip]] <- future({plotTiffAndPng(HdDifras,'meanHeadDiffLay')})
ip=ip+1
pltGrphs[[ip]] <- future({plotTiffAndPng(SIMras,'meanSIMLay')})
ip=ip+1
pltGrphs[[ip]] <- future({plotTiffAndPng(RCras,'meanRCLay')})
ip=ip+1
pltGrphs[[ip]] <- future({plotTiffAndPng(qSIMras,'p80SIMLay')})
ip=ip+1
pltGrphs[[ip]] <- future({plotTiffAndPng(qRCras,'p80RCLay')})
#===============================================================================
```

```
# Finished Developing rasters for GIS and map pngs
#===============================================================================
toc()
#===============================================================================
tic("Read Wetland datasets")
#===============================================================================
#  Read Polynomial Coefficients for Zeta Calculations
#     and
#  wetlands points by class from GIS exports
#     and
#  eliminate unnecessary columns, rename fields for consistency,
#  as well as fix Stressed column indicator to be consistent for
#  Class 1 and 2
#====================================================================
# polys<-read.csv(paste0(dataPath,"/PolyCoeff2019.csv"))
SFact<-read.csv(paste0(dataPath,"/StressFactor.csv"))#Default from last year.

# References spatial points
class1 <- read.csv(paste0(dataPath,
            "/Geospatial_BrianProducts/CFWI_Wetlands_Class_1_Inter_Table.csv"))

#class1 %<-% read.csv(paste0(dataPath,"/WetlandsClass1_2019v2imperv.csv"))
class2 <-read.csv(paste0(dataPath,
            "/Geospatial_BrianProducts/CFWI_Wetlands_Class_2_Inter_Table.csv"))

#class2 %<-% read.csv(paste0(dataPath,"/WetlandsClass2_2019v3imperv.csv"))
class3 <- read.csv(paste0(dataPath,
            "/Geospatial_BrianProducts/CFWI_Wetlands_Class_3_Inter_Table.csv"))
#class3 %<-% read.csv(paste0(dataPath,"/WetlandsClass3_2019v2imperv.csv"))

#Removing trailing white spaces-------------------------------------------------
class1$EM.Working.Group.ID<-trimws(class1$EM.Working.Group.ID,
                              which = c("right"), whitespace = "[ \t\r\n]")

class2$EM.Working.Group.ID<-trimws(class2$EM.Working.Group.ID,
                              which = c("right"), whitespace = "[ \t\r\n]")
#-------------------------------------------------------------------------------
class1<-dplyr::inner_join(class1,#Retains all rows
  Class1.Wetland.Info[,
    c('EM.Working.Group.ID','Current.Status','Physiographic.Region')],
  by=c("EM.Working.Group.ID"))
#Double check wetland acreage totals--------------------------------------------
class1Scale <- class1 %>%
  dplyr::group_by(EM.Working.Group.ID) %>%
  dplyr::summarize(Check_sum=sum(Grid_Acres))

class1Scale<-merge(class1,
                   class1Scale,
                   by.x='EM.Working.Group.ID' ,by.y='EM.Working.Group.ID')

class1Scale$check_diff<-class1Scale$TotalAcres - class1Scale$Check_sum

write.csv(class1Scale,paste0(dataPath,'/class1FromR.csv'))

Table1_Reviex<- class1Scale%>% dplyr::distinct(EM.Working.Group.ID,Site_Name,
```

```
                                            TotalAcres,Check_sum,check_diff)
#Class 2 below---------------------------------------------------------------
Class2.Wetland.Info <- read.csv(paste0(dataPath,
  "/Final_class1N2s/
  Class 2 Wetlands Detailed Info 2021-2023 Assessments FINAL 050224.csv"))

Class2.Wetland.Info$EM.Working.Group.ID<-trimws(
  Class2.Wetland.Info$EM.Working.Group.ID,
    which = c("right"), whitespace = "[ \t\r\n]")

class2<-dplyr::inner_join(class2,#Retains all rows
  Class2.Wetland.Info[,
    c('EM.Working.Group.ID','Current.Status','Physiographic.Region')],
  by=c("EM.Working.Group.ID"))

class2Scale <- class2 %>%
  dplyr::group_by(EM.Working.Group.ID) %>%
  dplyr::summarize(Check_sum=sum(Grid_Acres))

class2Scale<-merge(class2,
                   class2Scale,
                   by.x='EM.Working.Group.ID',by.y='EM.Working.Group.ID')


class2Scale$check_diff<-class2Scale$TotalAcres - class2Scale$Check_sum

write.csv(class2Scale,paste0(dataPath,'/class2FromR.csv'))

Table2_Reviex<- class2Scale%>% dplyr::distinct(
  EM.Working.Group.ID,Site_Name,TotalAcres,Check_sum,check_diff)

setnames(class1, "EM.Working.Group.ID", "CFCA_EMT_ID")
# setnames(class1, "Wetland_Ty", "Wetland_Type")
setnames(class1, "Physiographic.Region", "Phys")
setnames(class1, "Current.Status", "Stressed")
setnames(class1, "Grid_Acres", "Acres")

class1[class1$Stressed=="Not Stressed",]$Stressed<-"NO"#Revised 03/26/2024

# levels(class1$Stressed)[which(levels(class1$Stressed)=="Stressed")] <- "YES"
class1[class1$Stressed=="Stressed",]$Stressed<-"YES"#Revised 03/26/2024

class1[class1$Phys=="Plains",]$Phys<-"Plain"

# Needed <- c("CFCA_ID","ACRES_COMB","Ridge_or_P","SEQNUM",
#              "XCOORD_UTM","YCOORD_UTM","Stressed","nlcd11")
Needed <- c("EM.Working.Group.ID","Grid_Acres","Physiographic.Region",
            "SEQNUM","Long","Lat","Current.Status")

class2 <- class2[,Needed]
setnames(class2, "EM.Working.Group.ID", "CFCA_EMT_ID")
setnames(class2, "Grid_Acres", "Acres")
setnames(class2, "Physiographic.Region", "Phys")
setnames(class2, "Current.Status", "Stressed")
```

```
class2[class2$Stressed=="Not Stressed",]$Stressed<-"NO"#Revised 03/26/2024
class2[class2$Stressed=="Stressed",]$Stressed<-"YES"#Revised 03/26/2024

class2[class2$Phys=="Plains",]$Phys<-"Plain"

Needed<-c("SEQNUM","HydroClass","TYPE","Urban_Dens","SusceptGW",
          "Class","Long","Lat","Grid_Acres")

class3 <- class3[,Needed]
setnames(class3, "Grid_Acres", "Acres")
setnames(class3, "TYPE", "Phys")
setnames(class3, "Urban_Dens", "Urban_Density")

class3[class3$Phys=="Ridges",]$Phys<-"Ridge"

#If Uplands are reported they are considered plains
class3[class3$Phys=="Uplands",]$Phys<-"Plain"
class3[class3$Phys=="Plains",]$Phys<-"Plain"

vars4AreaZ <- c("Zus","Zsu")
class1[vars4AreaZ]<- NA
class2[vars4AreaZ]<- NA
class3[vars4AreaZ]<- NA

vars4SF <- c("SFsu","SFus")
class1[vars4SF]<-1.0
class2[vars4SF]<-1.0
class3[vars4SF]<-NA
#-------------------------------------------------------------------------------
# Wetland Weighting Factors:
# The reason for the weighting factors is that the Class 1 & Class 2 wetlands
# have been physically inspected.
#
# 1. Wetlands that are of the wrong hydrobiologic type have been excluded
# 2. "Significantly Hydrologically Altered" (SHA) Wetlands have been excluded
# 3. Wetland condition is known to be either stressed or unstressed.
#
# Without physical inspections of the Class 3 wetlands to supply that
# information, the total GIS wetland area is assigned a probability factor
# to represent the likelihood of the wetland being one for which either
# the Zu-s or Zs-u equation is appropriate.
#
# These probability factors were derived by comparing the Class 2 wetlands
# to the corresponding total wetland coverages.
#
# First multiply by the Dissimilarity Factor and the SHA Factor -
#   this reduces the total acreage by an amount that corrects for the likelihood
#   of GIS wetland area that is the "wrong" type of wetland, or that is SHA.
#
# Second Multiply that product again -
# once by the fraction of the surviving wetlands that are initially unstressed
#   to produce the SFu-s total correction factor,
#     and once by the fraction of the surviving wetlands that are initially
#       stressed to produce the SFs-u total correction factor.
#
```

```
#     TotCorrFact_us = DisFac*SHA_Fact*SFus
#     TotCorrFact_su = DisFac*SHA_Fact*SFsu
#--------------------------------------------------------------------------------
#  Wetland   Urban  Dissimilar   SHA      Stress   Stress  Correction  Correction
#  Type     Density   Factor    Factor   Factor   Factor    Factor       Factor
#                                        (u to s) (s to u)    (u-s)        (s-u)
#--------------------------------------------------------------------------------
#  Plain     low      0.694     0.820      0.824    0.176    0.469        0.100
#  Plain  Mod & High  0.616     0.581      0.824    0.176    0.295        0.063
#  Ridge     All      0.671     1.000      0.581    0.419    0.390        0.281
#--------------------------------------------------------------------------------
# SFact file defines the above processes========================================
class3[class3$Phys=='Plain',]$SFus = SFact[SFact$Wetland.Type=='Plain' &
                                             SFact$Urban.Density == 'low',]$Sfus

class3[class3$Phys=='Plain',]$SFsu = SFact[SFact$Wetland.Type=='Plain' &
                                             SFact$Urban.Density == 'low',]$Sfsu

class3[class3$Phys=='Plain' &  (class3$Urban_Density=='Moderate' |
                                  class3$Urban_Density=='High') ,]$SFus =
  SFact[SFact$Wetland.Type=='Plain' & SFact$Urban.Density == 'Mod & High',]$Sfus

class3[class3$Phys=='Plain' &  (class3$Urban_Density=='Moderate' |
                                  class3$Urban_Density=='High') ,]$SFsu =
  SFact[SFact$Wetland.Type=='Plain' & SFact$Urban.Density == 'Mod & High',]$Sfsu

class3[class3$Phys=='Ridge',]$SFus = SFact[SFact$Wetland.Type=='Ridge',]$Sfus
class3[class3$Phys=='Ridge',]$SFsu = SFact[SFact$Wetland.Type=='Ridge',]$Sfsu
#===============================================================================
# Finished Reading Wetland data sets
#===============================================================================
toc()
#===============================================================================
tic('Calculate probable stress for wetlands')
#===============================================================================
#--------------------------------------------------------------------------------
#  Create template dataframe for Stats
#--------------------------------------------------------------------------------
if (!exists('Stats')){
  Layer <- c(rep(1,12),rep(3,12))
  Class<- rep(c(1,1,2,2,3,3,1,1,2,2,3,3),2)
  Stress<-rep(c(rep('Stressed',6),rep('Unstressed',6)),2)
  Phys<-rep(c('Ridge','Plain'),12)
  Stats<-data.frame(Layer,Class,Stress,Phys,stringsAsFactors=FALSE)
  statColumns<-c('Total','Initial','Delta','Relative','Aquifer','exclude')
  Stats[statColumns]<-NA
}

WetType = c("Plain" ,"Ridge")

WetCond<-c('YES', 'NO')
ZetaCond<-c('Stressed', 'Unstressed')
#--------------------------------------------------------------------------------
#  Read zeta Models created by ZetaCalcIntegrals.R rather than polyCoeff.csv
#--------------------------------------------------------------------------------
```

```
#workdir= "Y:/proj/CFWI_WetlandStress/Update2018"
workdir=
  "//ad.sfwmd.gov/dfsroot/data/wsd/SUP/proj/CFWI_WetlandStress/Update2023/
  Script_N_Products/Products/ZetaCalcIntegrals_JG/Final_May/"

zetaModels=readRDS( paste0(workdir,"zetaModels.RDS"))
#--------------------------------------------------------------------------------
#  Function to create probLay matrix of probabilities
#--------------------------------------------------------------------------------
getProbLay<- function(DiffLay,NegModel,PosModel){
  probLay<-DiffLay
  newdata <- data.frame (delta = as.vector(DiffLay[DiffLay<0]))
  probtemp<- predict(NegModel,newdata=newdata)
  probLay[DiffLay<0]<-probtemp
  newdata <- data.frame (delta = as.vector(probLay[DiffLay>=0]))
  probtemp<- predict(PosModel,newdata=newdata)
  probLay[DiffLay>=0]<-probtemp
  return(probLay)
}
ip=0
ipl=0
for (c in ZetaCond){
  p<- NULL
  probLay<- (DiffLay*0)
  for (t in WetType) {
    cc = 'NO'
    zetaName = 'us'
    probTitle <- 'Unstressed to Stressed'
    if(c == 'Stressed'){
      cc = 'YES'
      zetaName = 'su'
      probTitle <- 'Stressed to Unstressed'
      }
    ipl=ipl+1
    if (t == 'Ridge' & c == 'Unstressed'){
      probLay<-getProbLay(DiffLay,zetaModels$ZRPu_sNeg,zetaModels$ZRPu_sPos)
    } else if (t == 'Ridge' & c == 'Stressed'){
      probLay<-getProbLay(DiffLay,zetaModels$ZRPs_uNeg,zetaModels$ZRPs_uPos)
    } else if (t == 'Plain' & c == 'Unstressed'){
      probLay<-getProbLay(DiffLay,zetaModels$ZPPu_sNeg,zetaModels$ZPPu_sPos)
    }else if (t == 'Plain' & c == 'Stressed'){
      probLay<-getProbLay(DiffLay,zetaModels$ZPPs_uNeg,zetaModels$ZPPs_uPos)
    } else {
      cat('Something goofed up!\n')
      cat(paste(c, t))
    }
    probLay[probLay<0] <- 0
    probLay[probLay>1] <- 1
    #----------------------------------------------------------------------------
    #  probLay matrix of probabilities is intersected w/wetlands pnts by SEQNUM
    #----------------------------------------------------------------------------
    zetaCol <-match(paste0('Z',zetaName),names(class1))
    class1[class1$Phys == t & class1$Stressed ==cc,zetaCol] <-
      round(probLay[class1[class1$Phys == t & class1$Stressed ==cc,]$SEQNUM],8)
```

```
    zetaCol <-match(paste0('Z',zetaName),names(class2))
    class2[class2$Phys == t & class2$Stressed ==cc,zetaCol] <-
      round(probLay[class2[class2$Phys == t & class2$Stressed ==cc,]$SEQNUM],8)

    # Initial stress condition is not know for class 3
    zetaCol <-match(paste0('Z',zetaName),names(class3))
    class3[class3$Phys == t,zetaCol] <-
      round(probLay[class3[class3$Phys == t,]$SEQNUM],8)
    #---------------------------------------------------------------------------
    # Crop raster data by extent of CFWI bndry
    #---------------------------------------------------------------------------

    probRas<-raster::raster(t(probLay[,]),rasExt[1:4], crs=HARNSP17ft)
    yourTheme = rasterTheme(region = brewer.pal('YlOrRd', n = 9))
    CFWIprobs <- raster::crop(probRas, extent(buffer(CFWIbnd,width=10000)))
    CFWIprobs <- raster::mask(CFWIprobs, CFWIbnd)
    ip=ip+1
    pltGrphs[[ip]] <- future({
      plotTiffAndPng(CFWIprobs,paste('CFWIprob',t,probTitle))
    })

  }
}
#---------------------------------------------------------------------------
#  Class 1, 2, & 3 wetland probable change in area is calculated as
#   Stressed becoming unstressed:
#     AreaXZsu = Acres * SFsu * probs
#
#   Unstressed becoming stressed:
#     AreaXZus = Acres * SFus * probs
#---------------------------------------------------------------------------
#Equations 24 & 25, Appendix F
#--
class1 <- class1 %>% mutate(AreaXZsu = Acres*SFsu*Zsu)#Equation 25, Appendix F
class1 <- class1 %>% mutate(AreaXZus = Acres*SFus*Zus)#Equation 24, Appendix F

class2 <- class2 %>% mutate(AreaXZsu = Acres*SFsu*Zsu)#Equation 25, Appendix F
class2 <- class2 %>% mutate(AreaXZus = Acres*SFus*Zus)#Equation 24, Appendix F

class3 <- class3 %>% mutate(AreaXZsu = Acres*SFsu*Zsu)#Equation 25, Appendix F
class3 <- class3 %>% mutate(AreaXZus = Acres*SFus*Zus)#Equation 24, Appendix F
#===============================================================================
# Finished Calculating probable stress for wetlands
#===============================================================================
toc()
#===============================================================================
tic("Creating maps")
#===============================================================================
class1.pnts <- sp::SpatialPointsDataFrame(coords = class1[, c("Long", "Lat")],
                    data = class1,proj4string = latlongs)#Make sure the provided
#(X,Y) or (lat, longs) are (Lat, Longs).

c1.pnts<-sp::spTransform(class1.pnts,HARNSP17ft)

class2.pnts <- sp::SpatialPointsDataFrame(coords = class2[, c("Long", "Lat")],
```

```
                                          data = class2,proj4string = latlongs)

c2.pnts<-sp::spTransform(class2.pnts,HARNSP17ft)


class3.pnts <-sp::SpatialPointsDataFrame(coords = class3[, c("Long", "Lat")],
                                         data = class3,proj4string = latlongs)

c3.pnts<-sp::spTransform(class3.pnts,HARNSP17ft)

probRas<-raster::raster(t(probLay[,]),rasExt[1:4], crs=HARNSP17ft)
yourTheme = rasterTheme(region = brewer.pal('YlOrRd', n = 9))
#---------------------------------------------------------------------------
# Crop raster data by extent of CFWI bndry
#---------------------------------------------------------------------------
CFWIprobs <- raster::crop(probRas, extent(buffer(CFWIbnd,width=10000)))
CFWIprobs <- raster::mask(CFWIprobs, CFWIbnd)

updateStatsDelta<- function(Stats,MFLay,t,c,class,source) {
  # cat(paste(Stats[Stats$Layer == MFLay &
  #                  Stats$Phys ==t &
  #                  Stats$Stress ==c &
  #                  Stats$Class==class,]$Delta,
  #          MFLay,t,c,class,sum(source,na.rm=T),'\n'))
  Stats[Stats$Layer == MFLay &
          Stats$Phys ==t &
          Stats$Stress ==c &
          Stats$Class==class,]$Delta <- round(sum(source,na.rm=T),2)
  return(Stats)
}
updateStatsInitial<- function(Stats,MFLay,t,c,class,Acres) {
  # cat(paste(Stats[Stats$Layer == MFLay &
  #                  Stats$Phys ==t &
  #                  Stats$Stress ==c &
  #                  Stats$Class==class,]$Initial,
  #          MFLay,t,c,class,sum(Acres,na.rm=T),'\n'))
  Stats[Stats$Layer == MFLay &
          Stats$Phys ==t &
          Stats$Stress ==c &
          Stats$Class==class,]$Initial <- round(sum(Acres,na.rm=T),2)
  return(Stats)
}

ip=0
deltas = stack()
if (MFLay == 1){
  deltasByPhys = stack()
}

for (t in WetType) {
  ttlWetAcres = 0
  for (c in ZetaCond){
    if (c == 'Stressed') {
      cc <-'YES'
      c1sub <-c1.pnts[c1.pnts$Phys==t &
```

```
                    c1.pnts$Stressed==cc,c('Phys','AreaXZsu')]

  c2sub <-c2.pnts[c2.pnts$Phys==t &
                    c2.pnts$Stressed==cc,c('Phys','AreaXZsu')]

  c3sub <-c3.pnts[c3.pnts$Phys==t ,c('Phys','AreaXZsu')]

  c123sub<-rbind(c1sub,c2sub)
  c123sub<-rbind(c123sub,c3sub)

  Stats<-updateStatsDelta(Stats,MFLay,t,c,1,c1sub$AreaXZsu)
  Stats<-updateStatsDelta(Stats,MFLay,t,c,2,c2sub$AreaXZsu)
  Stats<-updateStatsDelta(Stats,MFLay,t,c,3,c3sub$AreaXZsu)

  Acres = c1.pnts[c1.pnts$Phys ==t & c1.pnts$Stressed ==cc ,]$Acres
  Stats<-updateStatsInitial(Stats,MFLay,t,c,1,Acres)
  Acres = c2.pnts[c2.pnts$Phys ==t & c2.pnts$Stressed ==cc ,]$Acres
  Stats<-updateStatsInitial(Stats,MFLay,t,c,2,Acres)
  Acres = c3.pnts[c3.pnts$Phys ==t,]$Acres * c3.pnts[c3.pnts$Phys ==t,]$SFsu
  Stats<-updateStatsInitial(Stats,MFLay,t,c,3,Acres)
} else {
  cc<-'NO'
  c1sub <-c1.pnts[c1.pnts$Phys==t &
                    c1.pnts$Stressed==cc,c('Phys','AreaXZus')]

  c2sub <-c2.pnts[c2.pnts$Phys==t &
                    c2.pnts$Stressed==cc,c('Phys','AreaXZus')]

  c3sub <-c3.pnts[c3.pnts$Phys==t,c('Phys','AreaXZus')]

  c123sub<-rbind(c1sub,c2sub)
  c123sub<-rbind(c123sub,c3sub)

  Stats<-updateStatsDelta(Stats,MFLay,t,c,1,c1sub$AreaXZus)
  Stats<-updateStatsDelta(Stats,MFLay,t,c,2,c2sub$AreaXZus)
  Stats<-updateStatsDelta(Stats,MFLay,t,c,3,c3sub$AreaXZus)

  Acres = c1.pnts[c1.pnts$Phys ==t & c1.pnts$Stressed ==cc ,]$Acres
  Stats<-updateStatsInitial(Stats,MFLay,t,c,1,Acres)
  Acres = c2.pnts[c2.pnts$Phys ==t & c2.pnts$Stressed ==cc ,]$Acres
  Stats<-updateStatsInitial(Stats,MFLay,t,c,2,Acres)
  Acres = c3.pnts[c3.pnts$Phys ==t,]$Acres * c3.pnts[c3.pnts$Phys ==t,]$SFus
  Stats<-updateStatsInitial(Stats,MFLay,t,c,3,Acres)
}

if (MFLay == 3){
  Stats[Stats$Layer == 3 & Stats$Phys =='Plain' ,]$Delta<- 0
  Stats[Stats$Layer == 3 & Stats$Phys =='Plain' ,]$Initial<- 0
}
#
# Calc total inital acres of each type and class
#


c1.delta<-Stats[Stats$Layer == MFLay & Stats$Phys ==t &
```

```
                  Stats$Stress ==c & Stats$Class==1,]$Delta

c2.delta<-Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                  Stats$Stress ==c & Stats$Class==2,]$Delta

c3.delta<-Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                  Stats$Stress ==c & Stats$Class==3,]$Delta

c1.initial <-Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                     Stats$Stress ==c & Stats$Class==1,]$Initial

c2.initial <-Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                     Stats$Stress ==c & Stats$Class==2,]$Initial

c3.initial <-Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                     Stats$Stress ==c & Stats$Class==3,]$Initial

tabStats = paste('c1=',round(c1.delta,2),'c2=',round(c2.delta,2),
                 'c3=',round(c3.delta,2),'\n',
                 round(sum(c1.delta,c2.delta,c3.delta),2),'/',
                 round(sum(c1.initial,c2.initial,c3.initial),2),'=',
                 round(100*sum(c1.delta,c2.delta,c3.delta)/
                         sum(c1.initial,c2.initial,c3.initial),2),
                 '% of',t,'Wetlands')

if (c == ZetaCond[2]){
  title = paste0(
    'Layer ',MFLay,' ',c,' ',t,' to ', ZetaCond[1], '\n',tabStats)

  filename=paste(Out_Dir,paste0('Lay',MFLay,t,'-',c,'_to_',ZetaCond[1]),
                 ".png",sep="")

  acre.At = c(0,.5,1,2.5,5,7.5,10,max(c123sub$AreaXZus))
  deltaArea<- rasterize(c123sub,CFWIprobs,c123sub$AreaXZus)

  cat(paste("Max acres for ", c, t, max(deltaArea@data@values,na.rm=T),
            '\n'))

  tiffilename=paste(Out_Dir,paste0('Lay',MFLay,t,'-',c,'_to_',ZetaCond[1]),
                    ".tif",sep="")
}else {
  title = paste0('Layer ',MFLay,' ',c,' ',t,' to ', ZetaCond[2],
                 '\n',tabStats)

  filename=paste(Out_Dir,paste0('Lay',MFLay,t,'-',c,'_to_',ZetaCond[2]),
                 ".png",sep="")

  acre.At = c(0,.5,1,2.5,5,7.5,10,max(c123sub$AreaXZsu,na.rm=TRUE))
  deltaArea<- rasterize(c123sub,CFWIprobs,c123sub$AreaXZsu)

  cat(paste("Max acres for ", c, t,
            max(deltaArea@data@values,na.rm=T),'\n'))

  tiffilename=paste(Out_Dir,paste0('Lay',MFLay,t,'-',c,'_to_',ZetaCond[2]),
                    ".tif",sep="")
```

```
  }
  if (MFLay == 1 & t == "Plain" ){
    cat(paste('Adding Lay ',MFLay,' ',t,' to deltasByPhys stack \n'))

    deltasByPhys <- stack(deltasByPhys,deltaArea)

    cat(paste('Plains Lay1 step for deltasByPhys names After:',
              paste(unlist(names(deltasByPhys)), collapse=' ') ,'\n'))
  }
  if (MFLay == 3 & t == "Ridge" ){
    cat(paste('Adding Lay ',MFLay,' ',t,' to deltasByPhys stack \n'))

    deltasByPhys <- stack(deltasByPhys,deltaArea)

    cat(paste('Ridge Lay3 step for deltasByPhys names After:',
              paste(unlist(names(deltasByPhys)), collapse=' ') ,'\n'))
  }
  deltaArea[deltaArea==0]<-NA
  if(!(MFLay ==3 & t == 'Plain')){
    if (cc=='NO'){
      yourTheme = rasterTheme(region = brewer.pal('YlOrRd', n = 9))
    } else {
      yourTheme = rasterTheme(region = brewer.pal('YlGn', n = 9))

    }
    ip=ip+1
    cat(paste('Adding Lay ',MFLay,' ',t,' to deltas stack \n'))
    deltas <- stack(deltas,deltaArea)
    pltGrphs[[ip]] <- future({
    myplot= (levelplot(deltaArea,par.settings = yourTheme,
                       at=acre.At, main = title)+

               latticeExtra::layer(sp.polygons(clpBnds2, col='darkgray'))+
               latticeExtra::layer(sp.polygons(physiobnd, col='brown'))+
               latticeExtra::layer(sp.polygons(SomeLakes, col='blue'))+
               latticeExtra::layer(sp.polygons(CFWIbnd, col='red')))
    trellis.device(device="png", filename=filename, width=3000,
                   height=4500,units="px",res=300)

    print(myplot)
    dev.off()
    })
    ip=ip+1
    pltGrphs[[ip]] <- future({
      raster::writeRaster(deltaArea, tiffilename, format="GTiff",
                          overwrite=TRUE)
    })
  }
  Stats[Stats$Layer == MFLay & Stats$Phys ==t & Stats$Class==1,]$Total<-
    sum(Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                Stats$Class==1,]$Initial,na.rm=T)

  Stats[Stats$Layer == MFLay & Stats$Phys ==t & Stats$Class==2,]$Total<-
    sum(Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                Stats$Class==2,]$Initial,na.rm=T)
```

```
    Stats[Stats$Layer == MFLay & Stats$Phys ==t & Stats$Class==3,]$Total<-
      sum(Stats[Stats$Layer == MFLay & Stats$Phys ==t &
                  Stats$Class==3,]$Initial,na.rm=T)
  }
}
if (MFLay == 1){
  names(deltas)<- c('Plain_StoU','Plain_UtoS','Ridge_StoU','Ridge_UtoS')
  cat(paste('Before:', paste( unlist(names(deltasByPhys)), collapse=' '),'\n'))
  names(deltasByPhys)<- c('Plain_StoU','Plain_UtoS')
  cat(paste('After:', paste( unlist(names(deltasByPhys)), collapse=' '),'\n'))
  cat(paste('Switching sign on Stressed to Unstressed Plain','\n'))
  deltas$Plain_StoU <- deltas$Plain_StoU*(-1.0)
  deltasByPhys$Plain_StoU <- deltasByPhys$Plain_StoU*(-1.0)
} else {
  names(deltas)<- c('Ridge_StoU','Ridge_UtoS')

  cat(paste(deltas@layers[[1]]@data@max, deltas@layers[[2]]@data@max,'\n'))

  cat(paste(deltasByPhys@layers[[1]]@data@max,
            deltasByPhys@layers[[2]]@data@max,'\n'))

  cat(paste('Before Stack:', paste( unlist(names(deltasByPhys)),
                                    collapse=' ') ,'\n'))

  # deltasByPhys<-stack(deltasByPhys,deltas)
  cat(paste(deltasByPhys@layers[[1]]@data@max,
            deltasByPhys@layers[[2]]@data@max,
            deltasByPhys@layers[[3]]@data@max,
            deltasByPhys@layers[[4]]@data@max,'\n'))

  cat(paste('deltasByPhys names Before:', paste( unlist(
    names(deltasByPhys)), collapse=' ') ,'\n'))

  names(deltasByPhys)<- c('Plain_StoU','Plain_UtoS','Ridge_StoU','Ridge_UtoS')

  cat(paste('deltasByPhys names After:', paste( unlist(names(deltasByPhys)),
                                                collapse=' ') ,'\n'))

}
cat(paste('Switching sign on Stressed to Unstressed Ridge','\n'))
deltas$Ridge_StoU <- deltas$Ridge_StoU*(-1.0)

# Layer 1 ridges aren't saved to this dataframe for final tiff
if (MFLay == 3){
  deltasByPhys$Ridge_StoU <- deltasByPhys$Ridge_StoU*(-1.0)
}

index<-names(deltas)
FinalNetStress <- raster::stackApply(deltas,1,fun=base::sum,na.rm=TRUE)
tiffilename=paste0(Out_Dir,paste0('Lay',MFLay,"_NetStress.tif",sep=""))
#--
# export tiff with Layer 1 Plain and layer 3 Ridge stress Acres
#Additive raster stack,
#representative of the the additions of
```

```
#(probable change * Acres *Correction factor)
#for each condition (RidgeStoU + RidgeUtoS + PlainStoU+ PlainUtoS ).
#Correction factor comes from the SFact table.
#--
FinalNetStress2 <- raster::stackApply(deltasByPhys,1,fun=base::sum,na.rm=TRUE)
tiffilename2=paste0(Out_Dir,paste0('Lay',MFLay,"_NetStress2.tif",sep=""))

ip=ip+1
pieces<-unlist(strsplit(RCheadsFile,"[\\\\]|[^[:print:]]"))
RCtitle <- pieces[length(pieces)-1]
pieces<-unlist(strsplit(SIMheadsFile,"[\\\\]|[^[:print:]]"))
SIMtitle <- pieces[length(pieces)-1]

# extreme = max(abs(maxValue(FinalNetStress)), abs(minValue(FinalNetStress)))
filename=paste0(Out_Dir,paste0('Lay',MFLay,"_NetStress.png",sep=""))
filename2=paste0(Out_Dir,paste0('Lay',MFLay,"_NetStress2.png",sep=""))
title = paste0('Lay',MFLay,'_NetStress\n',RCtitle,'-',SIMtitle)
if (lowQuantile <0){
  ramp<-c(seq(lowQuantile, -.01, length=5), seq(0.01, hiQuantile, length=5))
  yourTheme = rasterTheme(region = c(
    colorRampPalette(c("seagreen", "white"))(5),
    colorRampPalette(c("white", "firebrick"))(5)))
}else {
  ramp<-seq(-1, hiQuantile, length=10)
  yourTheme = rasterTheme(region =colorRampPalette(c("white", "firebrick"))(11))
}
pltGrphs[[ip]] <- future({
  myplot= (
    levelplot(FinalNetStress,par.settings = yourTheme,at=ramp, main = title)+
              latticeExtra::layer(sp.polygons(clpBnds2, col='darkgray'))+
              latticeExtra::layer(sp.polygons(SomeLakes, col='blue'))+
              latticeExtra::layer(sp.polygons(CFWIbnd, col='red')))
  trellis.device(device="png", filename=filename, width=3000,height=4500,
                 units="px",res=300)
  print(myplot)
  dev.off()
})
pltGrphs[[ip]] <- future({
  myplot= (levelplot(
    FinalNetStress2,par.settings = yourTheme,at=ramp, main = title)+
              latticeExtra::layer(sp.polygons(clpBnds2, col='darkgray'))+
              latticeExtra::layer(sp.polygons(SomeLakes, col='blue'))+
              latticeExtra::layer(sp.polygons(CFWIbnd, col='red')))
  trellis.device(device="png", filename=filename2, width=3000,height=4500,
                 units="px",res=300)
  print(myplot)
  dev.off()
})
pltGrphs[[ip]] <- future({
  raster::writeRaster(FinalNetStress, tiffilename,
                      format="GTiff", overwrite=TRUE)
})
pltGrphs[[ip]] <- future({
  raster::writeRaster(FinalNetStress2, tiffilename2,
                      format="GTiff", overwrite=TRUE)
```

```
})

toc()
#===============================================================================
# Finished Creating maps
#===============================================================================
Stats[Stats$Layer==1,]$Aquifer <- 'Surficial'
Stats[Stats$Layer==3,]$Aquifer <- 'Upper Floridan'

Stats[Stats$Stress=="Stressed",]$Relative <-
  Stats[Stats$Stress=="Stressed",]$Delta*(-1.0)

Stats[Stats$Stress=="Unstressed",]$Relative <-
  Stats[Stats$Stress=="Unstressed",]$Delta

Stats$exclude = FALSE
# Stats[Stats$Layer==1 & Stats$Phys =="Ridge",]$exclude = TRUE
Stats[Stats$Layer==3 & Stats$Phys =="Plain",]$exclude = TRUE

write.csv(Stats,paste0(Out_Dir,'WetlandStressStats.csv'),
          row.names = F)
#===============================================================================
# Create Bar Charts from Wetland Stats
#===============================================================================
colours <- c("red", "orange", "blue", "yellow", "green")
longStats<-melt(Stats,id.vars=1:4)
longStats<-within(longStats, Class <- factor(Class))

pieces<-unlist(strsplit(RCheadsFile,"[\\\\]|[^[:print:]]"))
RCtitle <- pieces[length(pieces)-1]
pieces<-unlist(strsplit(SIMheadsFile,"[\\\\]|[^[:print:]]"))
SIMtitle <- pieces[length(pieces)-1]
L = MFLay

ggplot(longStats[longStats$variable=='Delta' & longStats$Layer == L,],
       aes(x = paste(Stress,Phys), y = value,
           fill = Class)) +
  geom_bar(stat = 'identity') +
  xlab("Initial Condition") +
  ylab("Acres of Change") +
  ggtitle(paste0("Layer",L,'\n',RCtitle,' minus ',SIMtitle))
plotfile =paste0(Out_Dir,'Lay',L,'Barchart.png')
ggsave(plotfile,width = 10,height = 7.5,units = "in",dpi = 300,device = "png")


if (MFLay==3){

  Summaries<-matrix(nrow = 12,ncol = 7)
  Summaries<-as.data.frame(Summaries,row.names = F)

  Rows_summaries<-c("Stressed_class1","Unstressed_class1","Totals_Class1",
                    "Stressed_class2","Unstressed_class2","Totals_Class2",
                    "Stressed_class3","Unstressed_class3","Totals_Class3",
                    "Stressed_totals","Unstressed_totals","Total_acres")
```

```
  Summaries$V1<-Rows_summaries


  names(Summaries)<-c("Set",
                      "RC_Plains_acres",
                      "Mod_Plains_Net_acres",
                      "RC_Ridge_Surficial_acres",
                      "RC_Ridge_UpperFloridan_acres",
                      "Mod_Ridge_Surficial_Net_acres",
                      "Mod_Ridge_UpperFloridan_Net_acres"
                      )

#Reference condition calculations-----------------------------------------------
  Plain_S_ss<-Stats[Stats$Layer==1 & Stats$Phys=="Plain" &
                      Stats$Stress=="Stressed",]

  Plain_U_ss<-Stats[Stats$Layer==1 & Stats$Phys=="Plain" &
                      Stats$Stress=="Unstressed",]

#Class1
  Summaries[1,]$RC_Plains_acres<-
    Plain_S_ss[Plain_S_ss$Class==1,]$Initial

  Summaries[2,]$RC_Plains_acres<-
    Plain_U_ss[Plain_U_ss$Class==1,]$Initial

  Summaries[3,]$RC_Plains_acres<-Summaries[1,]$RC_Plains_acres+
    Summaries[2,]$RC_Plains_acres
#Class2
  Summaries[4,]$RC_Plains_acres<-
    Plain_S_ss[Plain_S_ss$Class==2,]$Initial

  Summaries[5,]$RC_Plains_acres<-
    Plain_U_ss[Plain_U_ss$Class==2,]$Initial

  Summaries[6,]$RC_Plains_acres<-Summaries[4,]$RC_Plains_acres+
    Summaries[5,]$RC_Plains_acres

#Class3
  Summaries[7,]$RC_Plains_acres<-
    Plain_S_ss[Plain_S_ss$Class==3,]$Initial

  Summaries[8,]$RC_Plains_acres<-
    Plain_U_ss[Plain_U_ss$Class==3,]$Initial

  Summaries[9,]$RC_Plains_acres<-Summaries[7,]$RC_Plains_acres+
    Summaries[8,]$RC_Plains_acres

 #RC totals
  Summaries[10,]$RC_Plains_acres<-Summaries[1,]$RC_Plains_acres+
    Summaries[4,]$RC_Plains_acres+Summaries[7,]$RC_Plains_acres

  Summaries[11,]$RC_Plains_acres<-Summaries[2,]$RC_Plains_acres+
    Summaries[5,]$RC_Plains_acres+Summaries[8,]$RC_Plains_acres
```

```
  Summaries[12,]$RC_Plains_acres<-
    Summaries[10,]$RC_Plains_acres+Summaries[11,]$RC_Plains_acres
#Mod plain calculations------------------------------------------------------------
# Net changes (Positive number means adding stressed wetlands, negative number
# means adding unstressed wetlands)

#Net change class1
  Net_change_class1<-Plain_S_ss[Plain_S_ss$Class==1,]$Relative+
    Plain_U_ss[Plain_U_ss$Class==1,]$Relative

  Net_change_class2<-Plain_S_ss[Plain_S_ss$Class==2,]$Relative+
    Plain_U_ss[Plain_U_ss$Class==2,]$Relative

  Net_change_class3<-Plain_S_ss[Plain_S_ss$Class==3,]$Relative+
    Plain_U_ss[Plain_U_ss$Class==3,]$Relative
#Class1
  Summaries[1,]$Mod_Plains_Net_acres<-
    Plain_S_ss[Plain_S_ss$Class==1,]$Initial + Net_change_class1

  Summaries[2,]$Mod_Plains_Net_acres<-
    Plain_U_ss[Plain_U_ss$Class==1,]$Initial - Net_change_class1

  Summaries[3,]$Mod_Plains_Net_acres <-Summaries[1,]$Mod_Plains_Net_acres+
    Summaries[2,]$Mod_Plains_Net_acres

#Class2

  Summaries[4,]$Mod_Plains_Net_acres<-
    Plain_S_ss[Plain_S_ss$Class==2,]$Initial + Net_change_class2

  Summaries[5,]$Mod_Plains_Net_acres<-
    Plain_U_ss[Plain_U_ss$Class==2,]$Initial - Net_change_class2

  Summaries[6,]$Mod_Plains_Net_acres <-Summaries[4,]$Mod_Plains_Net_acres+
    Summaries[5,]$Mod_Plains_Net_acres
#Class3

  Summaries[7,]$Mod_Plains_Net_acres<-
    Plain_S_ss[Plain_S_ss$Class==3,]$Initial + Net_change_class3

  Summaries[8,]$Mod_Plains_Net_acres<-
    Plain_U_ss[Plain_U_ss$Class==3,]$Initial - Net_change_class3

  Summaries[9,]$Mod_Plains_Net_acres <-Summaries[7,]$Mod_Plains_Net_acres+
    Summaries[8,]$Mod_Plains_Net_acres

#Plains Mod totals
  Summaries[10,]$Mod_Plains_Net_acres <-Summaries[1,]$Mod_Plains_Net_acres+
    Summaries[4,]$Mod_Plains_Net_acres+Summaries[7,]$Mod_Plains_Net_acres

  Summaries[11,]$Mod_Plains_Net_acres <-Summaries[2,]$Mod_Plains_Net_acres+
    Summaries[5,]$Mod_Plains_Net_acres+Summaries[8,]$Mod_Plains_Net_acres

  Summaries[12,]$Mod_Plains_Net_acres<-Summaries[10,]$Mod_Plains_Net_acres+
    Summaries[11,]$Mod_Plains_Net_acres
```

```
#Ridge calculations===============================================================
#Ridge RC condition---------------------------------------------------------------
  RidgeSurficial_S_ss<-Stats[Stats$Layer==1 & Stats$Phys=="Ridge" &
                    Stats$Stress=="Stressed",]

  RidgeSurficial_U_ss<-Stats[Stats$Layer==1 & Stats$Phys=="Ridge" &
                    Stats$Stress=="Unstressed",]

#Class1
  Summaries[1,]$RC_Ridge_Surficial_acres<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==1,]$Initial

  Summaries[2,]$RC_Ridge_Surficial_acres<-
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==1,]$Initial

  Summaries[3,]$RC_Ridge_Surficial_acres<-
    Summaries[1,]$RC_Ridge_Surficial_acres+
    Summaries[2,]$RC_Ridge_Surficial_acres

#Class2
  Summaries[4,]$RC_Ridge_Surficial_acres<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==2,]$Initial

  Summaries[5,]$RC_Ridge_Surficial_acres<-
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==2,]$Initial

  Summaries[6,]$RC_Ridge_Surficial_acres<-
    Summaries[4,]$RC_Ridge_Surficial_acres+
    Summaries[5,]$RC_Ridge_Surficial_acres

#Class3
  Summaries[7,]$RC_Ridge_Surficial_acres<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==3,]$Initial

  Summaries[8,]$RC_Ridge_Surficial_acres<-
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==3,]$Initial

  Summaries[9,]$RC_Ridge_Surficial_acres<-
    Summaries[7,]$RC_Ridge_Surficial_acres+
    Summaries[8,]$RC_Ridge_Surficial_acres

#RC totals
  Summaries[10,]$RC_Ridge_Surficial_acres<-
    Summaries[1,]$RC_Ridge_Surficial_acres+
    Summaries[4,]$RC_Ridge_Surficial_acres+
    Summaries[7,]$RC_Ridge_Surficial_acres

  Summaries[11,]$RC_Ridge_Surficial_acres<-
    Summaries[2,]$RC_Ridge_Surficial_acres+
    Summaries[5,]$RC_Ridge_Surficial_acres+
    Summaries[8,]$RC_Ridge_Surficial_acres


  Summaries[12,]$RC_Ridge_Surficial_acres<-
    Summaries[10,]$RC_Ridge_Surficial_acres+
```

```
    Summaries[11,]$RC_Ridge_Surficial_acres
#RC upper Floridan Ridge=======================================================
  RidgeUF_S_ss<-Stats[Stats$Layer==3 & Stats$Phys=="Ridge" &
                              Stats$Stress=="Stressed",]

  RidgeUF_U_ss<-Stats[Stats$Layer==3 & Stats$Phys=="Ridge" &
                              Stats$Stress=="Unstressed",]
#Class1
  Summaries[1,]$RC_Ridge_UpperFloridan_acres<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==1,]$Initial

  Summaries[2,]$RC_Ridge_UpperFloridan_acres<-
    RidgeUF_U_ss[RidgeUF_U_ss$Class==1,]$Initial

  Summaries[3,]$RC_Ridge_UpperFloridan_acres<-
    Summaries[1,]$RC_Ridge_UpperFloridan_acres+
    Summaries[2,]$RC_Ridge_UpperFloridan_acres

#Class2
  Summaries[4,]$RC_Ridge_UpperFloridan_acres<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==2,]$Initial

  Summaries[5,]$RC_Ridge_UpperFloridan_acres<-
    RidgeUF_U_ss[RidgeUF_U_ss$Class==2,]$Initial

  Summaries[6,]$RC_Ridge_UpperFloridan_acres<-
    Summaries[4,]$RC_Ridge_UpperFloridan_acres+
    Summaries[5,]$RC_Ridge_UpperFloridan_acres

#Class3
  Summaries[7,]$RC_Ridge_UpperFloridan_acres<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==3,]$Initial

  Summaries[8,]$RC_Ridge_UpperFloridan_acres<-
    RidgeUF_U_ss[RidgeUF_U_ss$Class==3,]$Initial

  Summaries[9,]$RC_Ridge_UpperFloridan_acres<-
    Summaries[7,]$RC_Ridge_UpperFloridan_acres+
    Summaries[8,]$RC_Ridge_UpperFloridan_acres

#RC totals
  Summaries[10,]$RC_Ridge_UpperFloridan_acres<-
    Summaries[1,]$RC_Ridge_UpperFloridan_acres+
    Summaries[4,]$RC_Ridge_UpperFloridan_acres+
    Summaries[7,]$RC_Ridge_UpperFloridan_acres

  Summaries[11,]$RC_Ridge_UpperFloridan_acres<-
    Summaries[2,]$RC_Ridge_UpperFloridan_acres+
    Summaries[5,]$RC_Ridge_UpperFloridan_acres+
    Summaries[8,]$RC_Ridge_UpperFloridan_acres

  Summaries[12,]$RC_Ridge_UpperFloridan_acres<-
    Summaries[10,]$RC_Ridge_UpperFloridan_acres+
    Summaries[11,]$RC_Ridge_UpperFloridan_acres
```

```
#Modeled ridge Surficial net acres-----------------------------------------------
# Net changes (Positive number means adding stressed wetlands, negative number
# means adding unstressed wetlands)

#Net change class1
  Ridge_surficial_Net_change_c1<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==1,]$Relative+
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==1,]$Relative

  Ridge_surficial_Net_change_c2<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==2,]$Relative+
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==2,]$Relative

  Ridge_surficial_Net_change_c3<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==3,]$Relative+
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==3,]$Relative

#Class1
  Summaries[1,]$Mod_Ridge_Surficial_Net_acres<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==1,]$Initial+
    Ridge_surficial_Net_change_c1

  Summaries[2,]$Mod_Ridge_Surficial_Net_acres<-
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==1,]$Initial-
    Ridge_surficial_Net_change_c1

  Summaries[3,]$Mod_Ridge_Surficial_Net_acres <-
    Summaries[1,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[2,]$Mod_Ridge_Surficial_Net_acres

#Class2
  Summaries[4,]$Mod_Ridge_Surficial_Net_acres<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==2,]$Initial+
    Ridge_surficial_Net_change_c2

  Summaries[5,]$Mod_Ridge_Surficial_Net_acres<-
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==2,]$Initial-
    Ridge_surficial_Net_change_c2

  Summaries[6,]$Mod_Ridge_Surficial_Net_acres<-
    Summaries[4,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[5,]$Mod_Ridge_Surficial_Net_acres

  #Class3
  Summaries[7,]$Mod_Ridge_Surficial_Net_acres<-
    RidgeSurficial_S_ss[RidgeSurficial_S_ss$Class==3,]$Initial+
    Ridge_surficial_Net_change_c3

  Summaries[8,]$Mod_Ridge_Surficial_Net_acres<-
    RidgeSurficial_U_ss[RidgeSurficial_U_ss$Class==3,]$Initial-
    Ridge_surficial_Net_change_c3

  Summaries[9,]$Mod_Ridge_Surficial_Net_acres<-
    Summaries[7,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[8,]$Mod_Ridge_Surficial_Net_acres
```

```
#Plains Mod totals
  Summaries[10,]$Mod_Ridge_Surficial_Net_acres<-
    Summaries[1,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[4,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[7,]$Mod_Ridge_Surficial_Net_acres

  Summaries[11,]$Mod_Ridge_Surficial_Net_acres<-
    Summaries[2,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[5,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[8,]$Mod_Ridge_Surficial_Net_acres

  Summaries[12,]$Mod_Ridge_Surficial_Net_acres<-
    Summaries[10,]$Mod_Ridge_Surficial_Net_acres+
    Summaries[11,]$Mod_Ridge_Surficial_Net_acres

#Modeled ridge Upper Floridan net acres----------------------------------------
# Net changes (Positive number means adding stressed wetlands, negative number
# means adding unstressed wetlands)

#Net change class1
  Ridge_UF_Net_change_c1<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==1,]$Relative+
    RidgeUF_U_ss[RidgeUF_U_ss$Class==1,]$Relative

  Ridge_UF_Net_change_c2<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==2,]$Relative+
    RidgeUF_U_ss[RidgeUF_U_ss$Class==2,]$Relative

  Ridge_UF_Net_change_c3<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==3,]$Relative+
    RidgeUF_U_ss[RidgeUF_U_ss$Class==3,]$Relative

#Class1
  Summaries[1,]$Mod_Ridge_UpperFloridan_Net_acres<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==1,]$Initial+
    Ridge_UF_Net_change_c1

  Summaries[2,]$Mod_Ridge_UpperFloridan_Net_acres<-
    RidgeUF_U_ss[RidgeUF_U_ss$Class==1,]$Initial-
    Ridge_UF_Net_change_c1

  Summaries[3,]$Mod_Ridge_UpperFloridan_Net_acres <-
    Summaries[1,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[2,]$Mod_Ridge_UpperFloridan_Net_acres

  #Class2
  Summaries[4,]$Mod_Ridge_UpperFloridan_Net_acres<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==2,]$Initial+
    Ridge_UF_Net_change_c2

  Summaries[5,]$Mod_Ridge_UpperFloridan_Net_acres<-
    RidgeUF_U_ss[RidgeUF_U_ss$Class==2,]$Initial-
    Ridge_UF_Net_change_c2
```

```
  Summaries[6,]$Mod_Ridge_UpperFloridan_Net_acres<-
    Summaries[4,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[5,]$Mod_Ridge_UpperFloridan_Net_acres

#Class3
  Summaries[7,]$Mod_Ridge_UpperFloridan_Net_acres<-
    RidgeUF_S_ss[RidgeUF_S_ss$Class==3,]$Initial+
    Ridge_UF_Net_change_c3

  Summaries[8,]$Mod_Ridge_UpperFloridan_Net_acres<-
    RidgeUF_U_ss[RidgeUF_U_ss$Class==3,]$Initial-
    Ridge_UF_Net_change_c3

  Summaries[9,]$Mod_Ridge_UpperFloridan_Net_acres<-
    Summaries[7,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[8,]$Mod_Ridge_UpperFloridan_Net_acres

  #Plains Mod totals
  Summaries[10,]$Mod_Ridge_UpperFloridan_Net_acres<-
    Summaries[1,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[4,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[7,]$Mod_Ridge_UpperFloridan_Net_acres

  Summaries[11,]$Mod_Ridge_UpperFloridan_Net_acres<-
    Summaries[2,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[5,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[8,]$Mod_Ridge_UpperFloridan_Net_acres

  Summaries[12,]$Mod_Ridge_UpperFloridan_Net_acres<-
    Summaries[10,]$Mod_Ridge_UpperFloridan_Net_acres+
    Summaries[11,]$Mod_Ridge_UpperFloridan_Net_acres


 write.csv(Summaries,paste0(Out_Dir,'WetlandStress_summaries.csv'),
           row.names = F)
}#End of summary development
#===============================================================================
toc()
#[3:40 PM] Rodberg, Kevin GIS path
#\\ad.sfwmd.gov\dfsroot\GPro\WS\GW_TECH\CFWI\EMT\WetlandStress
```