

Natural Resources Assessment

Former Wolfe Parcels

September 15, 2025 | Project No. H4217314

Brownfield Assessment Grant

Cooperative Agreement BF02D09421

USEPA ACRES Property ID # 15274



Prepared For:

City of Clearwater
600 Cleveland Street
Clearwater, Florida

Site Address:

1720 Overbrook Avenue
Clearwater, Pinellas County, Florida



Nationwide
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September 15, 2025

City of Clearwater
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Attn: Mr. Joe DeCicco
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RE: Natural Resources Assessment

Former Wolfe Parcels
1800 Block of Overbrook Avenue
Clearwater, Pinellas County, Florida
Terracon Project No. H4217314 3B.3
Brownfield Assessment Grant
Hazardous Substance and Petroleum Sites
Cooperative Agreement BF02D09421
USEPA ACRES ID #15274

Dear Mr. DeCicco:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Natural Resources Assessment for the above-referenced site. The scope of this assessment included a wetland delineation and listed threatened and endangered species assessment. An Arboricultural Report and Desktop Cultural Assessment will be submitted under separate cover. This work was performed in general accordance with the scope of services outlined in the Consultant Work Order dated May 5, 2025, and the Site-Specific Quality Assurance Project Plan (SSQAPP) dated July 23, 2025. The City of Clearwater Brownfield Assessment Grant is funded with U.S. Environmental Protection Agency (USEPA) Region 4 brownfield hazardous substances and petroleum assessment cooperative agreement BF02D09421. Services were conducted as part of Task 3B of the Cooperative Agreement Work Plan between the client and EPA. This report was prepared for the exclusive reliance of City of Clearwater ("client"). Use or reliance by any other party is prohibited without the written authorization of the client and Terracon. We trust that this information will assist you in



your evaluation of the site. If you have questions concerning this report, or if we can assist you in other matters, please contact us.

Sincerely,

Terracon Consultants, Inc.

A handwritten signature in black ink, appearing to read 'Brennan Hagan'.

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ABBREVIATIONS

AMSL	ABOVE MEAN SEA LEVEL
BFE	BASE FLOOD ELEVATIONS
BGEPA	BALD AND GOLDEN EAGLE PROTECTION ACT
CFR	CODE OF FEDERAL REGULATIONS
CWA	CLEAN WATER ACT
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY
ERP	ENVIRONMENTAL RESOURCE PERMIT
ESA	ENDNAGERED SPECIES ACT
FAC	FLORIDA ADMINISTRATIVE CODE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FLUCFCS	FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM
FNAI	FLORIDA NATURAL AREAS INVENTORY
FWC	FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
GIS	GEOGRAPHIC INFORMATION SYSTEM
IPaC	USFWS INFORMATION, PLANNING, AND CONSERVATION
LDC	LAND DEVELOPMENT CODE
LEDPA	LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE
MBTA	MIGRATORY BIRD TREATY ACT
NRCS	NATURAL RESOURCE CONSERVATION SERVICE
NWI	NATIONAL WETLAND INVENTORY
NWPR	NAVIGABLE WATERS PROTECTION RULE
SWFWMD	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
UMAM	UNIFORM MITIGATION ASSESSMENT METHOD
USACE	U.S. ARMY CORPS OF ENGINEERS
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE
USGS	UNITED STATES GEOLOGICAL SURVEY
WOTUS	WATERS OF THE UNITED STATES

Executive Summary

This Natural Resources Assessment included a review of potential wetlands, surface waters, listed threatened and endangered species, and other protected species on the site in accordance with the Consultant Work Order dated May 5, 2025 and the Site-Specific Quality Assurance Project Plan (SSQAPP) dated July 23, 2025. The following section summarizes the findings and opinions resulting from Terracon's assessment.

Findings and Opinions

A summary of findings is provided below. It should be recognized that some details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

Site Description and Use

The site consists of ±12.17 acres of vacant commercial land located at 1720 Overbrook Avenue (identified as Pinellas County Parcel No. 03-29-15-00000-430-0500 and Parcel No. 03-29-15-85428-000-0030) in Clearwater, Florida. The site primarily consists of undeveloped land and a fire station. It is the understanding of Terracon that the site is being assessed for redevelopment funded through an EPA Brownfield grant.

Wetland/Surface Water Jurisdiction and Permitting Needs

There are ±2.25 acres of wetlands and ±1.44 acres of surface waters located on the site. These features are anticipated to be jurisdictional to the SWFWMD for the state, and the USACE under Section 404 of the CWA. An ERP will be required from SWFWMD to address stormwater needs for the development, as well as any proposed wetland or surface water impacts. Potential impacts would also require a permit from USACE as they are anticipated to qualify as WOTUS and be jurisdictional to Section 404 of the CWA. Mitigation will likely be required to offset wetland/surface water impacts by each of the agencies. Based on the location of the site within the Upper Coastal Drainage Cumulative Impact Basin, there are three mitigation banks that service the project location with available credits for purchase. On-site or Off-site mitigation through wetland creation, preservation, or enhancement may also be a feasible option.

Listed and Protected Species Assessment

Based on Terracon's review of the site, potential habitat for **three (3) species** was identified (See Section 7.0 of this report for details). It should be noted that this assessment included a general species survey and habitat assessment which does not qualify as a species-specific survey. As such, because marginal habitat and suitable soils for the gopher tortoise (*Gopherus polyphemus*) was identified onsite, a **formal survey for this species should be conducted** in accordance with published survey methodologies for that species, to determine if the

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species are present on site or if a permit will be required from the state and/or federal wildlife agencies. Additionally, habitat for multiple wading bird species was identified on the site. If wetland impacts are proposed as part of development on the site, a formal survey would be required. The other species identified as having potential habitat present on site do not require additional surveys. Please note that some species surveys have seasonal restrictions of when surveys can be conducted to be considered valid.

Conclusions and Recommendations

The site was investigated to identify the potential presence of wetlands and protected species on the site. Based on the results of our assessment, Terracon makes the following conclusions and recommendations:

- Wetlands and surface waters were identified onsite that fall under the jurisdiction of SWFWMD. An ERP application will need to be submitted to address stormwater needs and wetland/surface water impacts as they relate to the project, and mitigation may be required in order to offset those impacts.
- The wetlands and surface waters onsite appear to be connected a WOTUS feature via a continuous surface water connection (Stevenson Creek to Clearwater Harbor) and thus are anticipated to be jurisdictional to USACE. Therefore, a 404 Permit will be required from USACE for any proposed wetland/surface water impacts to WOTUS.
- During the site reconnaissance, marginal habitat for the gopher tortoise was found onsite. Therefore, Terracon recommends conducting a 100% gopher tortoise survey to determine absence or presence of the species on the site. Any potential impacts to potentially occupied burrows require a permit from FWC.

Permitting Needs

Based on Terracon's review of the site, the following permits/additional actions are anticipated for site development:

Permitting Needs and Additional Actions			
Resource	Permit/Action	Agency	Notes
Wetlands/Surface Waters	ERP	SWFWMD	Next Steps: Submit application materials to SWFWMD, conduct site visit with agency
Wetlands/Surface Waters	Section 404	USACE	Next Steps: Submit Section 404 permit application materials to USACE, conduct site visit with USACE (if required)

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Permitting Needs and Additional Actions			
Resource	Permit/Action	Agency	Notes
Gopher Tortoise	Gopher Tortoise Survey	FWC	Next steps: Conduct a gopher tortoise survey. Surveys are valid for 90 days. A valid survey is required for a permit from FWC.
Wading Birds	Survey	FWC	Next Steps: If wetlands are proposed for impact - conduct a formal survey to determine if any wading birds are absent or present on the site.

1.0 Introduction

The site consists of ±11.80 acres of vacant commercial land located at 1720 Overbrook Avenue (identified as Pinellas County Parcel Nos. 03-29-15-00000-430-0500 and Parcel No. 03-29-15-85428-000-0030) in Clearwater, Florida. The site primarily consists of undeveloped land and a fire station. It is the understanding of Terracon that the site is being assessed as part of a Brownfield grant.

Any potential wetland areas on the site would likely fall under the jurisdiction of the SWFWMD for the State and potentially as WOTUS regulated by federal authority under 33 CFR Parts 320-330 by USACE. Potential impacts to species which are listed as threatened or endangered would fall under the jurisdiction of the FWC for state listed species, and the USFWS for federally listed species. The following sections provide Terracon's methodologies and findings to conduct a natural resources assessment of the site.

2.0 Methodology

2.1 Wetland Delineation

Terracon initially reviews readily available published resources to preliminarily identify features indicative of jurisdictional resources on the project site or in the immediate vicinity. The NRCS Soil Survey for Pinellas County, the NWI, the FDOT FLUCFCS, and historical aerial imagery are also reviewed.

A site reconnaissance is then conducted on site for WOTUS utilizing the 1987 *Corps of Engineers Wetland Delineation Manual* and further supported by the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* and the pre-2015 definition of WOTUS and the FDEP Wetlands Delineation Manual¹, Rule 62-340 FAC for waters of the State; and wetlands and surface waters are field delineated based on the three wetland parameters of hydrophytic vegetation, hydrology, and hydric soil indicators.

Potential wetland areas initially identified through the review of readily available resources are located on site and delineated by designating boundaries with flagging tape. The locations of the flags are then recorded on an EoS Positioning System Arrow 100 Submeter GNSS Receiver GPS unit with sub-meter accuracy.

¹Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweely, and J.R. Cooper. 1995. *The Florida Wetlands Delineation Manual*. FDEP, Tallahassee, FL.

2.2 Listed Species Assessment

The site is preliminarily investigated for the presence of state and federally protected animal and plant species and their habitat. Literature and agency file searches are conducted to identify the potential occurrence of state and federally protected animal species on the site. A review of GIS databases containing listed species observations and a map review is performed prior to the field assessment. The USFWS IPAC and FNAI search engines are also utilized to determine potential occurrences.

USFWS-IPAC identifies potential occurrences and habitat for federally listed threatened and endangered species, proposed listed and candidate species, and designated critical habitat. The FNAI search engine identifies potential occurrences of both federally and state listed species. The results of the USFWS-IPAC and FNAI search results are then compiled to produce Table 1 in Appendix C of this report. The search results are supplemented by data from the FWC. Additional FWC databases researched for this assessment include Map Direct, wading bird colonies, the eagle nest locator, and GIS data layers of species occurrences. Terracon also supplements the species lists with species outlined in Rule 68A-27 FAC, and FWC approved species conservation and permitting guidelines. Database search results are included in Appendix C.

A general wildlife survey is then performed by Terracon onsite by conducting the following activities:

- A general survey is conducted for migratory bird species by utilizing high-powered binoculars to search for migratory bird activity from select vantage points on the site. Additionally, transects are walked to locate any migratory bird nests on the site.
- A reconnaissance-level listed flora and fauna survey is conducted for the project area.
- An assessment is conducted by a qualified biologist to identify the occurrence and relative abundance of species considered endangered, threatened, or listed as a species of special concern by the USFWS (50 CFR 11-12) or the FWC (Chapter 68A-27, FAC). All sightings, sign, call, tracks, scat, nests, cavities, burrow, and probable habitat of wildlife observed is documented.
- Provide habitat maps if necessary.

Table 1 in Appendix C provides a list of state and federally protected animal and plant species with the potential to occur within the vicinity of the site in Pinellas County, Florida, and makes a recommendation as to whether further investigations are warranted.

2.3 Land Cover

To better categorize onsite habitats, onsite areas were demarcated and classified using FLUCFCS.² Particular attention was allocated to undeveloped and natural areas. The current conditions are discussed in Section 4.0 of this report and depicted on Exhibit 6 (Appendix A).

2.4 Functional Assessment

If wetlands and/or surface waters are identified onsite, a preliminary assessment is conducted in accordance with Rule 62-345 FAC: UMAM to assess current site conditions and associated wetland function. The three areas of focus when determining wetland function consists of a review of location and landscape support, water environment, and community structure/benthic community. These three parameters are assigned a value between 0 and 10 with 0 representing no wetland function (uplands) and 10 representing optimal wetland function. These scores are averaged out a maximum potential score of 30 and represented as a percentage of wetland function. This percentage is referred to as the UMAM "Delta" which represents the functional "value", of the wetlands used to estimate mitigation needs should direct or indirect impacts be proposed. Terracon's preliminary UMAM analysis is limited in nature and is to be used to determine mitigation estimates only. Final UMAM scores are subject to regulatory approval.

3.0 Desktop Assessment

3.1 Topography and Hydrology

A review of the USGS topographical maps for this parcel (Clearwater, FL Quadrangle), and elevation data from Google Earth indicate the parcel is situated between 0 and 22 feet AMSL. Surface water drainage is anticipated to be consistent with the topographic gradient of the site which generally flows in a western direction toward a surface water feature. According to the USGS Topographic Map Key, the site appears to be undeveloped, forested, and contains a surface water as of the most recent topographic map. The topographic maps are included as Exhibit 1, Appendix A.

3.2 Soil Survey

According to the NRCS Soil Survey for Pinellas County, mapped soil units on the site include the following:

²Florida Department of Transportation, Survey and Mapping Office Geographic Mapping Section. January 1999, Third Ed. Florida Land Use, Cover and Forms Classification System. Tallahassee, FL.

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NRCS Soil Survey					
Soil Type	Soil ID #	Hydric?	Burrowing Fauna Suitability	Estimated Depth to Water Table	Drainage Class
Immokalee soils and Urban land	13	N	Less Suited	6 to 18 inches	Poorly drained
Matlacha and St. Augustine soils and Urban land	16	N	Moderately Suited	24 to 36 inches	Somewhat poorly drained
Myakka soils and Urban land	17	N	Less Suited	6 to 18 inches	Poorly drained
Wulfert muck, tidal, 0 to 1 percent slopes	32	Y	Unsuitable	0 inches, or at the soil surface	Very poorly drained

During the site reconnaissance, Terracon dug test pits to analyze subsurface soil conditions for hydric soil indicators. According to the *Hydric Soils of Florida Handbook*, Wulfert muck, tidal (32) is categorized as a hydric soil. Immokalee soils and Urban land (13), Matlacha and St. Augustine soils and Urban land (16), and Myakka soils and Urban land (17) are not categorized as hydric soils. The Immokalee and Urban Land (13) designated areas were not observed to be consistent with the NRCS soil survey during field verification. A portion of the area designated as (13) contained hydric soils. However, the remaining soils type designated areas located on site were observed to be generally consistent with the NRCS soil survey designation.

Additionally, Terracon reviewed the *Gopher Tortoise Burrowing Suitability* layer on the NRCS Web Soil Survey. According to this resource, Matlacha and St. Augustine soils and Urban land (16) is rated 'moderately suited' and may be conducive for burrowing fauna such as the gopher tortoise or the Florida burrowing owl (*Athene cunicularia*). Immokalee soils and Urban land (13) and Myakka soils and Urban land (17) are rated 'less suited' and these soils have characteristics that may limit establishment, maintenance, or use of the site by burrowing fauna. Wulfert muck, tidal (32) is rated 'unsuitable' and is not conducive for burrowing fauna. The NRCS Soil Survey Map for the site is included as Exhibit 3.

3.3 National Wetlands Inventory

The NWI map of the site was reviewed to identify potential wetlands and surface waters. The map for the site was published by USFWS and depicts probable wetland areas and surface waters based on stereoscopic analysis of high-altitude aerial photographs, topographic maps, and soil survey information. The NWI map depicts estuarine and marine wetlands on the western portion of the site. Additionally, the NWI map depicts a surface water within the southwestern corner of the site. This is generally consistent with Terracon's field observations. The NWI map for the site is included as Exhibit 4.

3.4 Flood Zones

Terracon reviewed the FEMA ArcGIS online open data portal to determine if the subject project area falls within a designated flood zone area. The site is located within Flood Zone AE, which are areas subject to a 0.2% annual chance flood hazard, and which BFEs have been determined. The BFE for this portion of the site is 9 feet AMSL. The FEMA 100-Year Flood Zone Map is included as part of Appendix A.

3.5 Previously Issued Wetland Permits

Terracon reviewed the following sources to determine if wetland or surface water permits had previously been issued for the site, or if the site is associated with a currently valid permit.

- **ERP Database:** The SWFWMD and FDEP ERP databases were reviewed to identify potential wetland areas and permits previously issued for the site. According to the records search, there were no previous ERP permits issued for the site.
- **State 404 Program Permit Database:** The FDEP State 404 Program permit database was reviewed to identify potential wetland areas and permits previously issued for the site. According to the records search, there are no previously issued State 404 Program permits issued for the site.
- **USACE Permit Database:** The USACE permit database was reviewed to identify potential wetland areas and permits issued for the site. According to the records search, there are no previously issued wetland permits associated with the site.

3.6 Recorded Conservation Easements

Terracon reviewed available data layers made available through FDEP's Map Direct database to determine if the site was associated with recorded conservation easements. According to these resources, there are no conservation easements recorded for the site. However, Terracon recommends that title records for the site be researched prior to acquisition or development of the site as this resource's records may be incomplete.

4.0 Site Reconnaissance

The site was reviewed by Brennan Hagan, PWS, Matthew Kendall, Brianna Pollmann, and Ashley Chattle, WPIT, on August 12 and August 13, 2025. The site was investigated for the presence of wetlands and surface waters using the Routine Onsite Determination Method described in the FDEP Wetland Delineation Manual and the 1987 USACE Wetland Delineation Manual. Additionally, the site was investigated to determine if habitat for listed threatened or endangered species was present based on FLUCFCS designation. The following section outlines Terracon's observations during the site reconnaissance.

4.1 Existing Site Conditions

Based on the site inspection and review of the above resources, the following land uses were observed on the site:

- **Residential** (Mapped FLUCFCS Code – 110) ±0.05-acre: A portion of the northern area of the site contains landscaped areas associated with the adjacent residential property.
- **Governmental** (Mapped FLUCFCS Code – 175) ±1.65 acres: A portion of the site is an operational fire station that consists of a building, parking lot, landscaped areas, and associated infrastructure.
- **Open Land** (Mapped FLUCFCS Code – 190) ±2.33 acres: This mapped unit is located centrally on the site. This area has historically operated as a car lot and has been heavily altered over time. The ground cover vegetation present on site consists of Bahia grass (*Paspalum notatum*), frog fruit (*Phyla nodiflora*), beggartick (*Bidens alba*), common ragweed (*Ambrosia artemisiifolia*), camphor weed (*Heterotheca subaxillaris*), and sandspur (*Cenchrus echinatus*).
- **Upland Hardwood Forests** (Mapped FLUCFCS Code – 420) ±1.74 acres: This mapped unit is located on the western portion of the site. The canopy consists of live oak (*Quercus virginiana*), sand live oak (*Quercus geminata*), laurel oak (*Quercus laurifolia*), camphor tree (*Cinnamomum camphora*), earpod (*Enterolobium contortisiliquum*), and Australian pine (*Casuarina equisetifolia*). The subcanopy consists of cabbage palm (*Sabal palmetto*), red cedar (*Juniperus virginiana*), Brazilian pepper (*Schinus terebinthifolia*), carrotwood (*Cupaniopsis anacardioides*), and cherry laurel (*Prunus caroliniana*). The ground cover consists of sword fern (*Nephrolepis cordifolia*), air potato (*Dioscorea bulbifera*), bracken fern (*Pteridium aquilinum*), and saw palmetto (*Serenoa repens*).
- **Bays and Estuaries** (Mapped FLUCFCS Code – 540) ±1.44 acres: This mapped unit is located on the southern and western portion of the site. The feature is part of Stevenson Creek which is an estuarine waterbody that feeds into Clearwater Harbor.

- **Mangrove Swamps** (Mapped FLUCFCS Code – 612) ±2.08 acres: This mapped unit is located on the southern and western portion of the site. The subcanopy consists of red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and Brazilian pepper. The ground cover consists of coastal leather fern (*Acrostichum danaeifolium*), pepper vine (*Nekemias arborea*), and purslane (*Portulaca oleracea*).
- **Exotic Wetland Hardwoods** (Mapped FLUCFCS Code – 619) ±0.17-acre: This mapped land use is located centrally on the site. The vegetation consists of Brazilian pepper.
- **Disturbed Land** (Mapped FLUCFCS Code – 740) ±2.34 acres: This mapped unit is located centrally on the site. The subcanopy consists of Brazilian pepper, white leadtree (*Leucaena leucocephala*), common ragweed, air potato, pokeweed (*Phytolacca americana*), carrotwood, sicklepod (*Senna obtusifolia*), and wireweed (*Sida ulmifolia*).

5.0 Wetland Jurisdiction and Permitting Needs

5.1 City of Clearwater

The City of Clearwater does not have its own independent wetland regulation program. The City defers regulation of any impacts to wetlands and surface water to state and federal permitting regulations.

5.2 Water Management District

The wetlands and surface waters on site also fall under the jurisdiction of SWFWMD. An ERP application would need to be submitted to address stormwater needs and wetland/surface water impacts as they relate to the project. If SWFWMD deems it necessary, mitigation may be required in order to offset any impacts to wetlands or surface waters. If purchasing mitigation credits is the preferred method of mitigation, the credits would need to be purchased from a mitigation bank located within the same drainage basin. Please see Section 6.0 for more information regarding the mitigation options.

5.3 United States Army Corps of Engineers

The wetlands and surface waters onsite appear to share a continuous surface water connection to a WOTUS feature just west of the site. The wetland system and surface water are both directly connected to Clearwater Harbor via Stevenson Creek. Due to this, the wetlands and surface waters onsite are anticipated to be jurisdictional to USACE. Pursuant to 33 CFR § 328.3, the wetlands on site should be considered (a)(4) 'Adjacent wetlands' because of their connection to Stevenson Creek. Pursuant to 33 CFR § 328.3, the surface waters on site should be considered (b)(3) 'Tributaries' because of their connection to Clearwater Harbor.

via Stevenson Creek. It is the opinion of Terracon that the wetlands and surface waters on the site are considered WOTUS and would therefore be jurisdictional to USACE. As such, a Section 404 permit will be required from USACE if the wetlands or surface waters on site are proposed to be impacted.

6.0 Functional Assessment

In accordance with Rule 62-345 FAC: UMAM, Terracon conducted a preliminary analysis to determine the functional value of wetlands onsite that were proposed to be impacted. The following table is a summary of the preliminary UMAM scores for the site.

Assess ment Area	Type	Location & Landscape		Water Environment		Community Structure		Delta
		w/o	w	w/o	w	w/o	w	
Wetland 1	Direct	5	0	4	0	2	0	-0.37
Wetland 2	Direct	6	0	6	0	7	0	-0.63
Wetland 3	Direct	6	0	6	0	7	0	-0.63

Based on the UMAM analysis of the wetlands onsite, the functional value of Wetland 1 is estimated to be 0.37 and the functional value for Wetlands 2 & 3 are estimated to each be 0.63. Therefore, each acre of impact to Wetland 1 would require 0.37 credits, and each acre of impact to Wetlands 2 & 3 would require 0.63 credits.

6.1 Wetland Mitigation

Based on Terracon's preliminary UMAM analysis, and the availability of mitigation banks; the following outlines the anticipated mitigation costs associated with wetland or applicable surface water impacts. This table assumes 100% of wetlands/surface waters on the site will be impacted/developed.

Table 2: Wetland Mitigation

Wetland Type	Acres	Preliminary UMAM Δ	Basin	Estimated Cost per Credit	Estimated Cost (±10%)
Wetland 1	0.17	-0.37	Upper Coastal	\$250,000	\$15,725
Wetland 2	1.67	-0.63	Upper Coastal	\$250,000	\$263,025
Wetland 3	0.41	-0.63	Upper Coastal	\$250,000	\$64,575

If utilizing a mitigation bank is the preferred method of mitigation, then mitigation credits would need to be purchased from a mitigation bank located within the same cumulative impact basin to offset wetland impacts and yield “no net loss” of wetlands. Please note that the preliminary UMAM scores provided by Terracon are not final, and all UMAM scores must be reviewed and approved by the applicable regulatory agency. The estimates provided above are preliminary estimates and are subject to change.

7.0 Listed Species Assessment

7.1 Listed Wildlife

During the site reconnaissance, Terracon assessed the presence of listed threatened or endangered species, and species otherwise federally or state protected, as well as potential habitat for these species utilizing the methodologies as outlined in Section 2.2 of this report. Based on our observations, potential habitat for the following fauna was identified onsite:

- Gopher Tortoise:** The gopher tortoise is listed as a state-threatened species. Typical habitat for this species includes dry upland habitats which include disturbed sites and improved pastures. Based on the site reconnaissance, Terracon determined that there is marginal habitat for the gopher tortoise onsite. While suitable soils for burrowing fauna are mapped on the site, the site has been altered with fill material which does not contain suitable soils for burrowing fauna. However, because the site contains marginal habitat, **Terracon recommends a gopher tortoise survey be conducted on the site to confirm absence if requested.**
- West Indian Manatee (*Trichechus manatus*):** This species is state/federally threatened and is also protected by the 1972 Marine Mammal Protection Act (50-216, CFR). This marine mammal typically inhabits salt to freshwater habitats close to shore

such as bays, estuaries, inlets, canals, rivers, inland spring runs, and lakes. Because the site includes portions of the Stevenson Creek and connection to Clearwater Harbor, Terracon determined that the site contains suitable foraging habitat for manatees. If wetland or surface water impacts are proposed with this project, Terracon recommends coordination with USFWS to determine the appropriate mitigation measures necessary to avoid or minimize impacts to this species during development. However, if marine mammal observers are located on site during development, and if signage and speed restrictions are implemented post-development, it is the opinion of Terracon that the project *may affect but is not likely to adversely affect* this species.

- **Wood Stork** (*Mycteria americana*): This state/federally listed species typically nests in forested wetlands and forages in shallow ponds and freshwater marshes. The site contains herbaceous freshwater wetlands that are anticipated to be considered suitable foraging habitat. Additionally, the site is located within the core foraging area (CFA) of the wood stork (less than 18.6 miles from a known colony). However, impacts to wood stork foraging habitat would be offset by wetland mitigation pursuant to Section 404(b)(1) of the CWA. Therefore, it is the opinion of Terracon that the proposed development *may affect, but is not likely to adversely affect*, this species. If the wetland mitigation for any proposed development associated with this project cannot meet the requirements of Section 404(b)(1) of the CWA, the proposed development *may affect* the species.

7.2 Migratory Birds

7.2.1 Bald Eagles

Bald Eagles are protected under the BGEPA and MBTA. No bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) individuals, nests, or eggs were noted on the site during the site reconnaissance. In addition, Terracon accessed the bald eagle nest locator dataset provided through FDEP's Map Direct database, as well as the eagle nest location map made available through the National Audubon Society's Eagle Watch Program website. According to these sources, there is one (1) documented bald eagle nest (Nest ID: PI935) within one mile (3,256 feet) of the project site. However, the project site is not located within the 330-foot or 660-foot nest protection zones. Therefore, no impacts to bald eagles are anticipated during site development.

7.2.2 Wading Birds and Other State Protected Birds

Although not listed in the FNAI or IPaC species lists, the following birds are protected as threatened, endangered, are species of special concern to the state of Florida, or are protected under other state migratory bird regulations pursuant to Rule 68A-27:

- **Wading Birds:** There are multiple species of wading birds and water-dependent birds that are listed as threatened or endangered by the State of Florida. These state-

threatened wading bird species typically nest in large multi-species colonies. These species rely on wetlands and small islands for breeding and foraging purposes, require an absence of ground predators, and a variety of woody vegetation to support nest structures. Because these species have closely related habitat requirements and can be found inhabiting the same nesting sites, they are collectively considered as “wading birds” for the purposes of this report. Specific habitat requirements for some of these species may vary, but if present, these species are typically associated with wetland systems. These species include Little Blue Heron (*Egretta caerulea*), Reddish Egret (*Egretta rufescens*), Roseate Spoonbill (*Platalea ajaja*), Tricolored Heron (*Egretta tricolor*), Snowy Egret (*Egretta thula*) and White Ibis (*Eudocimus albus*). If wetland impacts will occur as part of the proposed development, a wading bird survey should be conducted to determine if any of these species are utilizing the site for nesting or foraging, and if a permit would be required for habitat modification.

- **Imperiled Beach Nesting Birds:** These species are typically found along sandy beaches, inlets, spoil and barrier islands, and estuaries. Breeding sites for these species require sparsely vegetated open areas with appropriate substrate for nesting such as sand, shell, gravel, cobble, dredge spoil, etc. Foraging habitat for these species includes a variety of estuarine, marine, and freshwater habitats. These species include American oystercatcher (*Haematopus palliatus*), snowy plover (*Charadrius nivosus*), black skimmer (*Rynchops niger*), and least tern (*Sternula antillarum*). According to the FWC IBNB ShoreMapper tool, there are no documented active or recent breeding sites, critical brood-rearing sites, or critical roosting sites mapped within 300 feet of the site. In addition, appropriate nesting habitat was not observed, and foraging habitat would be limited to the estuarine areas on site. As such, it is the opinion of Terracon that the proposed development is not likely to adversely affect these species and additional surveying or permitting actions are not warranted.

7.2.3 Other Migratory Birds

No migratory birds, nests, or eggs protected under the MBTA were noted on the site during the site reconnaissance.

7.3 Species Proposed for Listing

On September 13, 2022, the USFWS published a proposed rule to list the tricolored bat (*Perimyotis subflavus*) as an endangered species under the ESA. The final rule to list the bat under the ESA is expected to become published in mid-to-late 2024. At this current time, the bat is not listed under the ESA, however, there is potential for this species to become listed during the life cycle of the proposed project. As such, the project proponent has the option to reassess potential impacts to this species once the final rule is published; or to analyze the project’s current potential impacts to this species. Because there are forested areas on the site, and because the site is located within an area with documented occurrences of this species, Terracon recommends further analysis and agency consultation for this species.

7.4 Listed Plant Species

No listed threatened or endangered plant species was identified onsite during the site reconnaissance. It should be noted that the site reconnaissance may have been conducted outside of the survey season for certain species; however, there are currently no state or federal regulatory protections regarding the removal or destruction of listed plant species unless they are located on federal lands. As such, additional consultation with the agencies regarding listed plant species should not be required.

8.0 Report Limitations

Please note that this report does not satisfy criteria necessary to determine presence or absence of listed threatened or endangered species on the site. In order to determine the presence or absence of these resources, a species-specific survey must be conducted in accordance with published survey methodologies or that particular species. The purpose of this report is to provide a due diligence level assessment of the site to determine if suitable habitat is present onsite for any listed species, and if additional assessment is warranted.

It should also be noted that this due diligence level assessment does not satisfy wetland permit application requirements for state or federal jurisdictional agencies. Wetland permit applications require a detailed narrative regarding direct impacts, secondary impacts, cumulative impacts, avoidance and minimization, an alternative site analysis, pre and post land use changes, and other pertinent details which are not included in this report.

9.0 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third-party resources supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed to by the client. Findings, conclusions, and recommendations resulting from these services are based upon information derived from the onsite activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of wetlands may have been latent, inaccessible, unobservable, or not present during our services.

10.0 User Reliance

This report is prepared for the exclusive use and reliance of City of Clearwater. Use or reliance by any other party is prohibited without the written authorization of City of Clearwater and Terracon Consultants, Inc. (Terracon). Reliance on this report by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal and Terracon's Agreement for Professional Services, dated June 27, 2019. The limitation of liability defined in the Agreement is the aggregate limit of Terracon's liability to the client and all relying parties.

11.0 References

Army Corps of Engineers "Corps of Engineers Wetland Delineation Manual", dated January 1987.

Florida Department of Environmental Protection, Florida Wetland Plants: An Identification Manual (January 1998)

Florida Department of Environmental Protection, Map Direct Gallery,
<https://ca.dep.state.fl.us/mapdirect/>

Florida Natural Areas Inventory, Biodiversity Matrix Map Server,
<https://www.fnai.org/biodiversity-matrix-intro>

Florida Fish and Wildlife Conservation Commission, Species Conservation Measures and Permitting Guidelines, <https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/>

Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweely, and J.R. Cooper. 1995. The Florida Wetlands Delineation Manual. FDEP, Tallahassee, FL.

ISB: Atlas of Florida Vascular Plants (On-line Service 2014),
<https://florida.plantatlas.usf.edu/>

Munsell Soil Color Charts (Munsell 1931)

United States Fish and Wildlife Service, National Wetland Inventory "Wetlands Mapper" (US Fish and Wildlife 2013), <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>

University of Florida Forest Stewardship, 2009. "Common Trees in Florida Hardwood Forests".

USDA Natural Resources Conservation Service, University of Florida, and Florida Association of Environmental Soil Scientists, March 2007. Hydric Soils of Florida Handbook, Fourth Edition.

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<https://ipac.ecosphere.fws.gov/>

Florida Department of Environmental Protection, July 1, 1994, Rule 62-340 F.A.C
"Delineation of the Landward Extent of Wetlands and Surface Waters"

Natural Resources Assessment

Former Wolfe Parcels ■ Clearwater, Florida

September 15, 2025 ■ Terracon Project No. H4217314 3B.3



Florida Department of Environmental Protection, April 27, 2005, Rule 62-345 F.A.C "Uniform Mitigation Assessment Method"

Florida Department of State, November 14, 2011, Rule 68A-27 F.A.C. "Rules Relating to Endangered or Threatened Species"

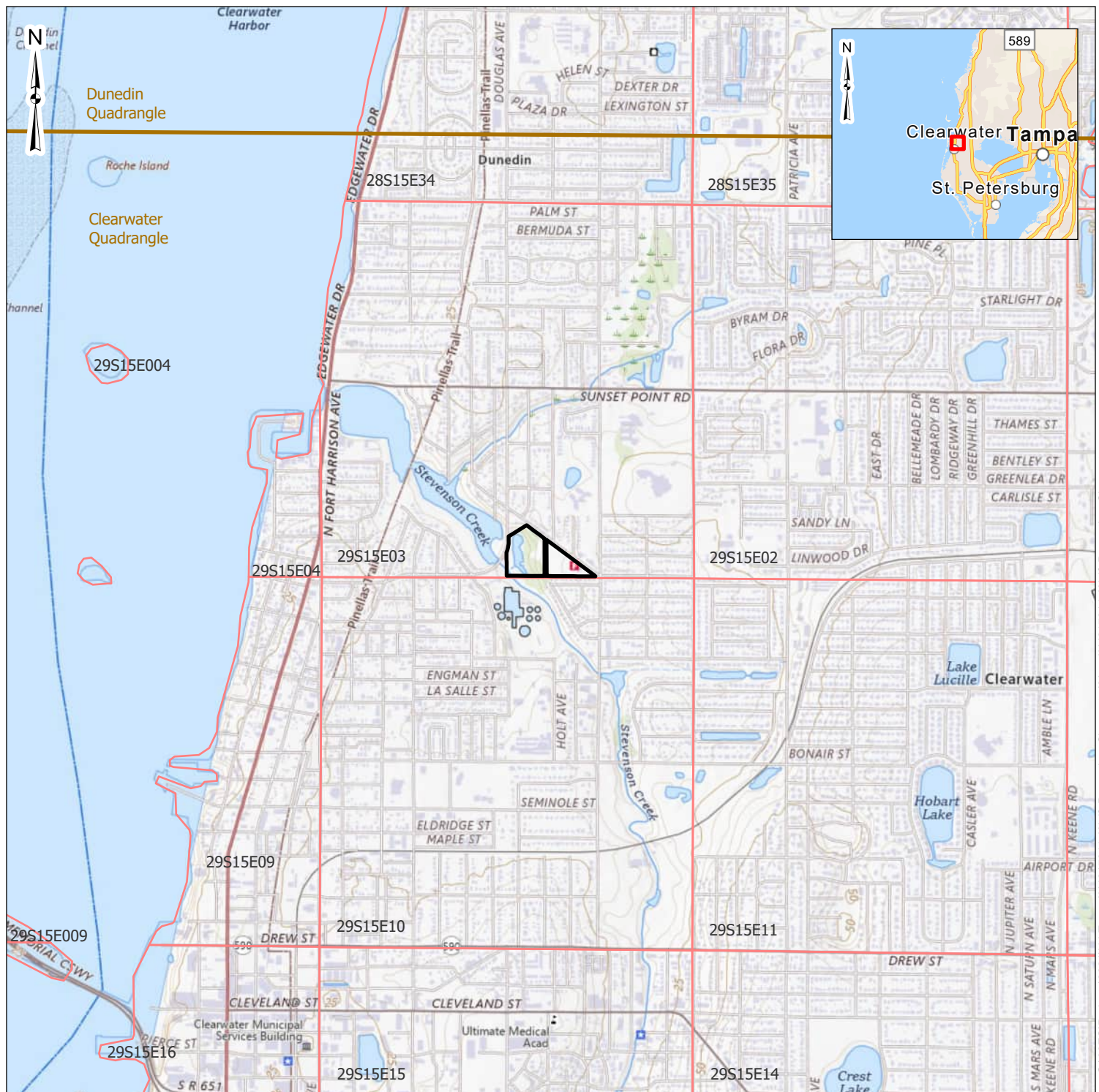
Florida Department of Environmental Protection, December 22, 2020 Rule 62-330 F.A.C "Environmental Resource Permitting"

Florida Department of Environmental Protection, December 22, 2020, Rule 62-331 F.A.C "State 404 Program"

United States Fish and Wildlife Service. Tri-colored Bat Occurrence Map [Tricolored Bat \(Perimyotis subflavus\) | Map | U.S. Fish & Wildlife Service | FWS.gov](#)

Appendix A

Exhibits



- Project Location
- USGS 24K Quadrangle Grid
- Public Land Survey System - TRIS

Feet
0 1,000 2,000 4,000

DATA SOURCES:
USGS Topographic Survey; Clearwater Quadrangle;
ESRI - USGS Topographic Basemap & World
Navigation Map

Project No.:
H4217314
Date:
Sep 2025
Drawn By:
JMA
Reviewed By:
BH

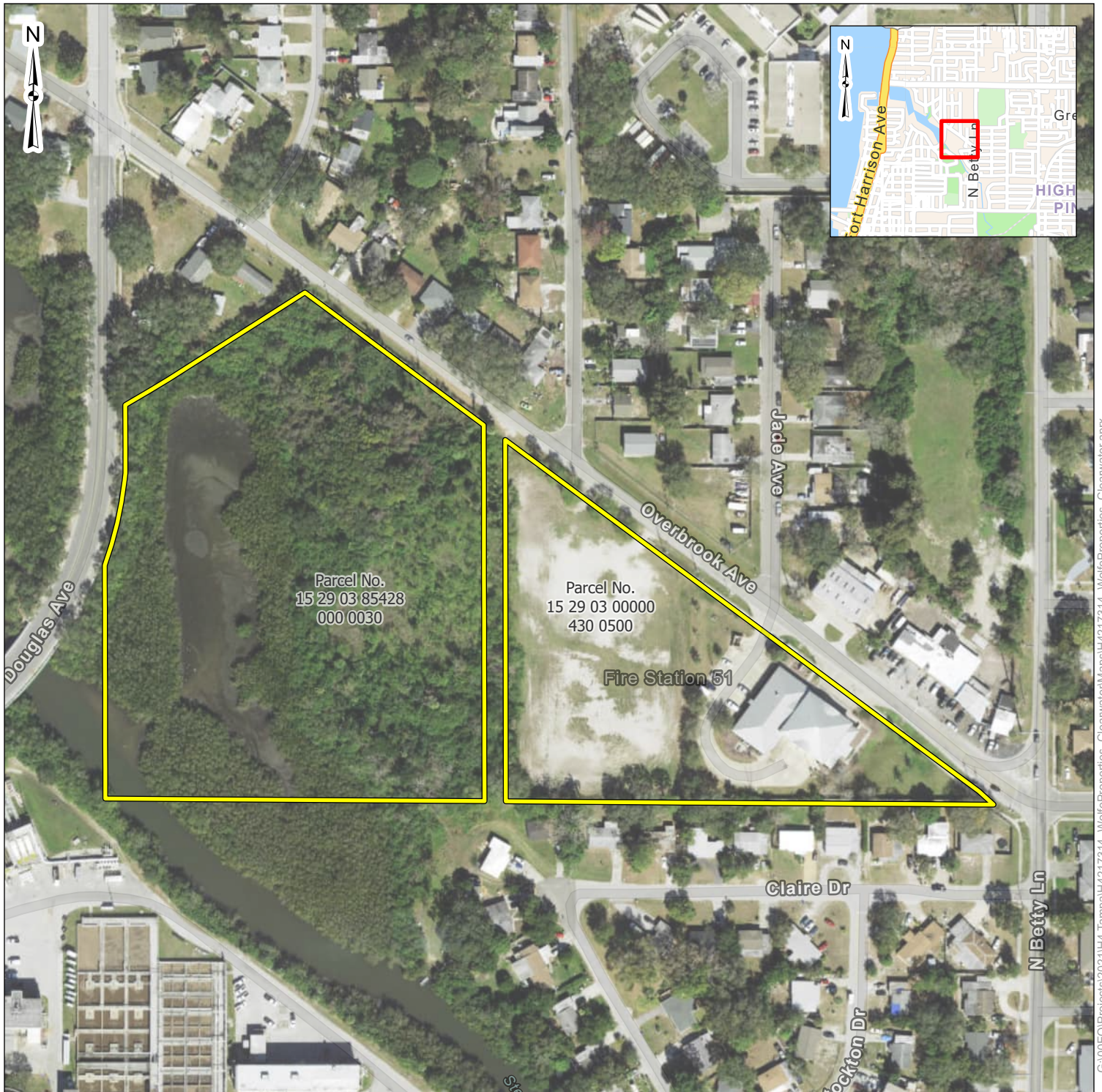
terracon
1675 Lee Road Winter Park, FL 32789
PH. (407) 740-6110 terracon.com

Project Location

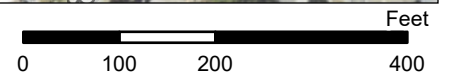
Natural Resources Assessment
City of Clearwater EPA Brownfields Assessment
Former Wolfe Parcels
Clearwater, Pinellas County, Florida

Exhibit

1



- Project Boundary
- Pinellas County Property Parcels



DATA SOURCES:
 Pinellas County, FL - Property Parcels (2025); ESRI -
 World Imagery Basemap (Feb. 2023) & World
 Navigation Map

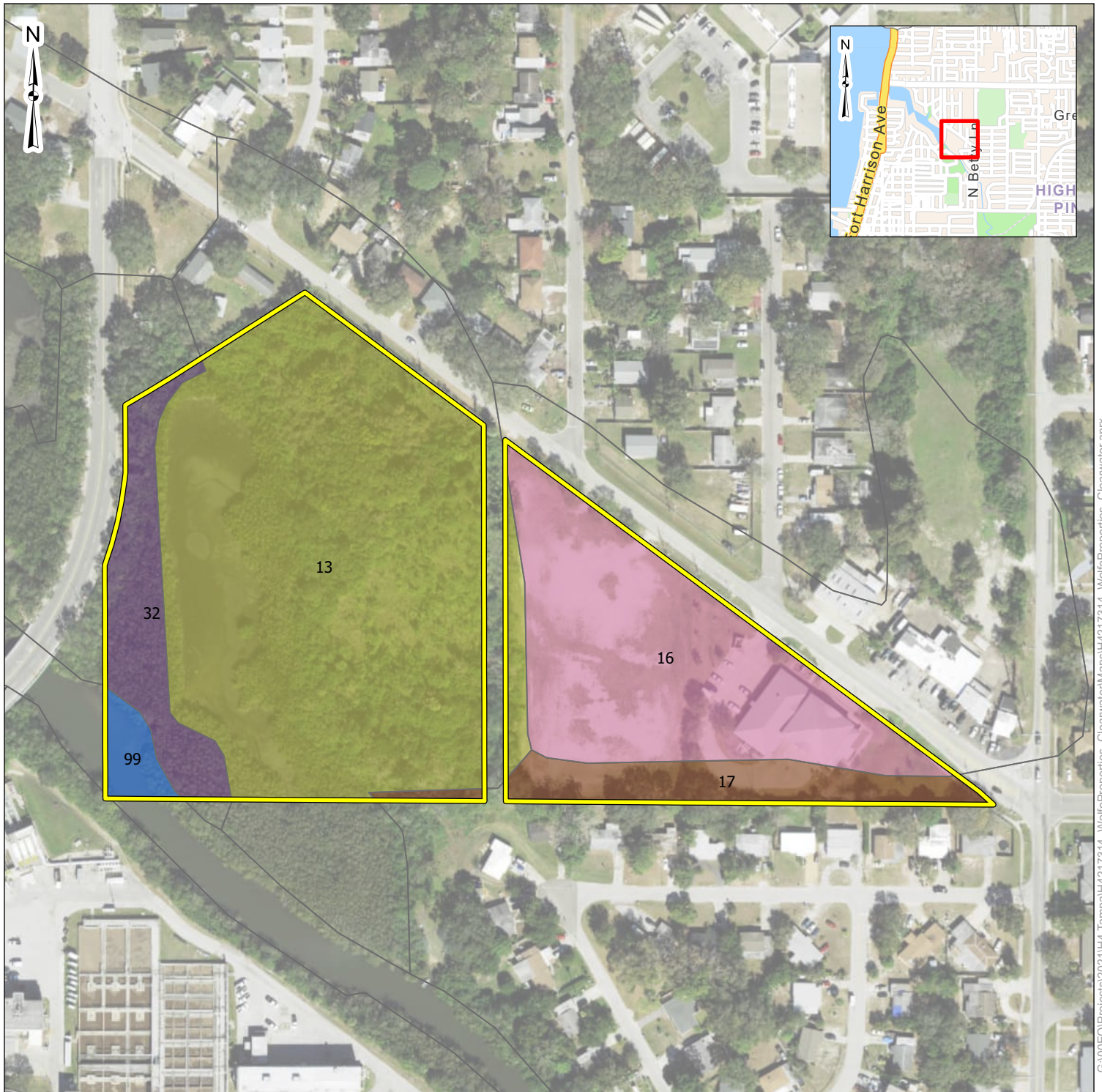
Project No.:	H4217314
Date:	Sep 2025
Drawn By:	JMA
Reviewed By:	BH

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Aerial Photograph
Natural Resources Assessment City of Clearwater EPA Brownfields Assessment Former Wolfe Parcels Clearwater, Pinellas County, Florida

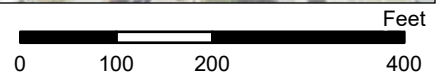
Exhibit
2



Project Boundary

Soils

- 13, Immokalee Soils and Urban Land
- 16, Matlacha and St. Augustine Soils and Urban Land
- 17, Myakka Soils and Urban Land
- 32, Wulfert Muck, Tidal, 0-1% Slopes
- 99, Water



DATA SOURCES:
 NRCS - USDA Soils Survey of Pinellas County, FL;
 ESRI - World Imagery Basemap (Feb. 2023) & World Navigation Map

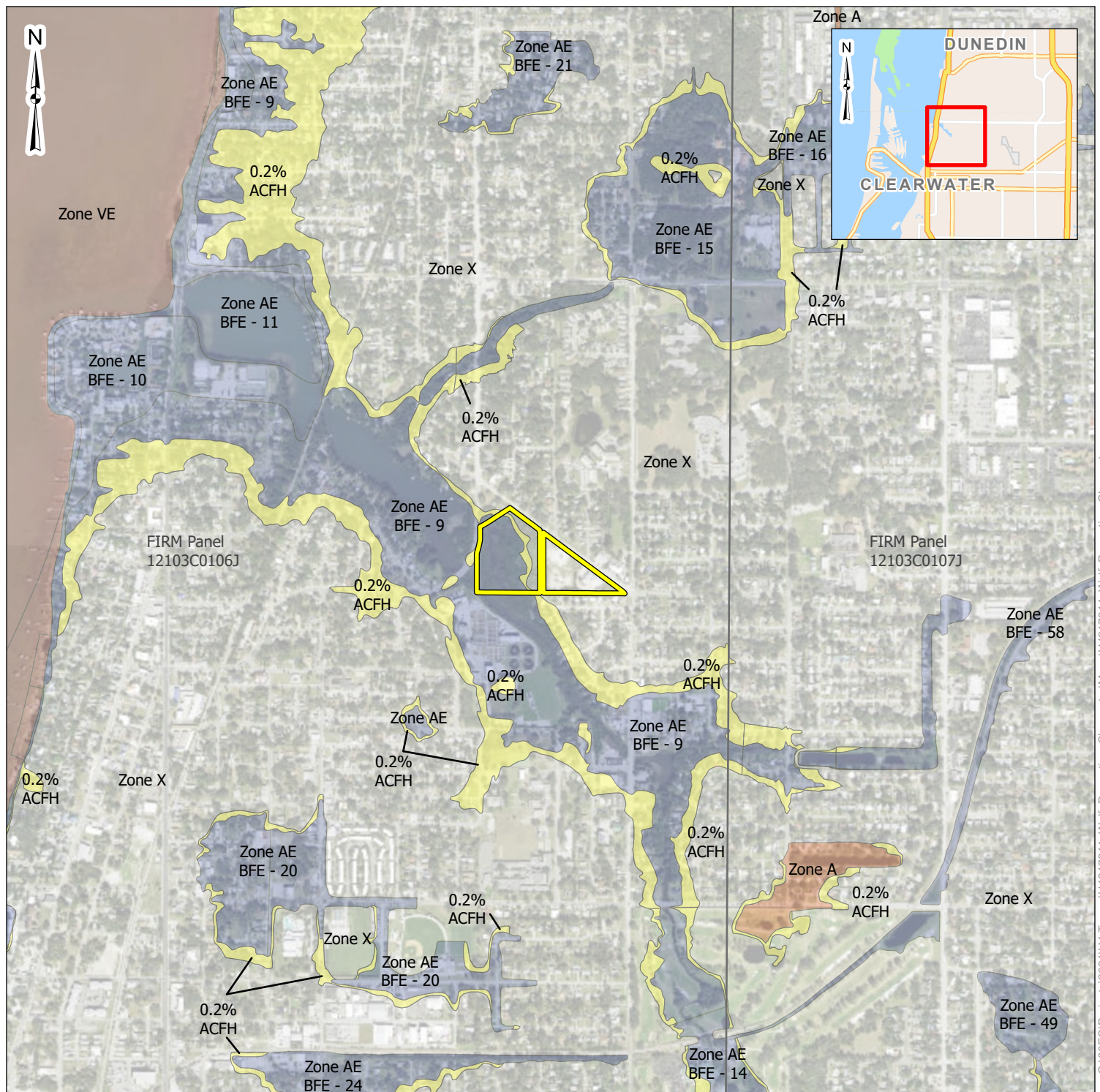
Project No.:	H4217314
Date:	Sep 2025
Drawn By:	JMA
Reviewed By:	BH



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NRCS Soils
Natural Resources Assessment City of Clearwater EPA Brownfields Assessment Former Wolfe Parcels Clearwater, Pinellas County, Florida

Exhibit
3



 Project Boundary

 FIRM Panel

FEMA Flood Hazard Area

Zone A - No Base Flood Elev. Determined

Zone AE - Base Flood Elev. Determined

Zone VE - Coastal Flood Zone with Velocity Hazard

Zone X - Outside 0.2% Annual Chance Floodplain

0.2 Pct Annual Chance Flood Hazard

Feet
0 600 1,200 2,400

DATA SOURCES:
FEMA Flood Zones for Orange County, FL; FIRM Panel
No. 12103C0107J; ESRI - World Imagery Basemap
(Feb. 2023) & World Navigation Map

Project No.:
H4217314

Date:
Sep 2025

Drawn By:
JMA

Reviewed By:
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FEMA Flood Zones

Natural Resources Assessment
City of Clearwater EPA Brownfields Assessment
Former Wolfe Parcels
Clearwater, Pinellas County, Florida

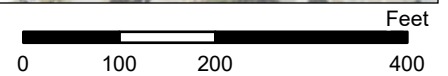
Exhibit

5

G:\00EQ\Projects\2021\H4 Tampa\H4217314_WolfeProperties_Clearwater\Map\Clearwater.aprx



- Project Boundary (11.80 ac.±)**
- FLUCFCS**
- 110, Residential (0.05 ac.±)
 - 175, Governmental (1.65 ac.±)
 - 190, Open Land (2.33 ac.±)
 - 420, Upland Hardwood Forests (1.74 ac.±)
 - 540, Bays and Estuaries (1.44 ac.±)
 - 612, Mangrove Swamps (2.08 ac.±)
 - 619, Exotic Wetland Hardwoods (0.17 ac.±)
 - 740, Disturbed Lands (2.34 ac.±)



DATA SOURCES:
Florida Land Use, Cover and Forms Classification System (FLUCFCS); ESRI - World Imagery Basemap (Feb 2023) & World Navigation Map

Project No.:	H4217314
Date:	Sep 2025
Drawn By:	JMA
Reviewed By:	BH

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Existing Site Conditions
Natural Resources Assessment City of Clearwater EPA Brownfields Assessment Former Wolfe Parcels Clearwater, Pinellas County, Florida

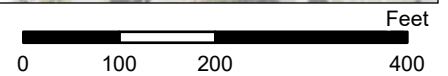
Exhibit
6



Project Boundary (11.80 ac.±)

Land Classification

- Wetlands (2.25 ac.±)
- Uplands (8.48 ac.±)
- Other Surface Waters (1.44 ac.±)



DATA SOURCES:
Terracon - Wetland Delineation (08/2025); ESRI - World Imagery Basemap (Feb. 2023) & World Navigation Map

Project No.:	H4217314
Date:	Sep 2025
Drawn By:	JMA
Reviewed By:	BH

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Approximate Wetlands
<p>Natural Resources Assessment City of Clearwater EPA Brownfields Assessment Former Wolfe Parcels Clearwater, Pinellas County, Florida</p>

Exhibit
7

Appendix B

Photos

Natural Resources Report

Former Wolfe Properties ■ Clearwater, Florida
August 22, 2025 ■ Terracon Project No. H4217314



Photo #1 Typical open areas



Photo #2 Typical forested uplands



Photo #3 Typical disturbed areas



Photo #4 Typical wetland areas



Photo #5 Typical wetland areas



Photo #6 Stevenson Creek

Appendix C

Species Lists

Table 1 Listed Threatened and Endangered Species				
Species	Federal Status	State Status	Habitat	Habitat Present
Reptiles				
Eastern Indigo Snake (<i>Drymarchon couperi</i>)	T	FT	Broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. In northern part of range, often winters in gopher tortoise burrows in sandy uplands but forages in more hydric habitats. Requires very large tracts to survive.	No suitable habitat observed on site.
Gopher Tortoise (<i>Gopherus polyphemus</i>)	C	T	Typically found in dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; also commonly uses disturbed habitats such as pastures, old fields, and road shoulders.	Marginal habitat observed on site.
Hawksbill Sea Turtle (<i>Eretmochelys imbricata</i>)	E	FR	May be found in subtropical and tropical oceans. They prefer warm seas and are found primarily on reefs of the Florida Keys and along the Atlantic coast. There is a nesting beach located near St. Pete area.	No suitable habitat observed on site.
Leatherback Sea Turtle (<i>Dermochelys coriacea</i>)	E	FE	Typically found in coastal waters, with minimal nesting locations found on the Gulf Coast.	No suitable habitat observed on site.
Birds				
Eastern Black Rail (<i>Laterallus jamaicensis</i>)	T		Tidally or non-tidally influenced, and range in salinity from salt to brackish to fresh. Can be found in higher elevation wetland zones with some shrubby vegetation. Impounded and unimpounded intermediate marshes	No suitable habitat observed on site.
Everglade Snail Kite (<i>Rostrhamus sociabilis plumbeus</i>)	E	FE	Snail Kite habitat consists of freshwater marshes and the shallow vegetated edges of natural and manmade lakes where apple snails can be found. Snail Kites require foraging areas that are relatively clear and open so that they can visually search for apple snails.	No suitable habitat observed on site.

Table 1 Listed Threatened and Endangered Species				
Species	Federal Status	State Status	Habitat	Habitat Present
Rufa Red Knot (<i>Calidris canutus rufa</i>)	T	FT	Generally utilize coastal marine and estuarine habitats with large areas of exposed intertidal sediments. Migration and wintering habitats include high-energy ocean or bay-front areas, as well as tidal flats in more sheltered bays and lagoons. Preferred habitats are muddy or sandy coastal areas such as: bays, estuaries, tidal flats, and unimproved tidal inlets. Generally nests in dry, elevated tundra locations, often on windswept slopes with little vegetation.	No suitable habitat observed on site.
Seaside Sparrow (<i>Ammodramus maritimus peninsulae</i>)		SSC	Tidal marshes dominated by smooth cordgrass	No suitable habitat observed on site.
Wood Stork (<i>Mycteria americana</i>)	T	FT	Nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves. Forages mainly in shallow water in freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures and ditches, where they are attracted to falling water levels that concentrate food sources (mainly fish).	Suitable habitat observed on site.
Mammals				
Florida Manatee (<i>Trichechus manatus</i>)	T		Inhabit warm water in rivers, bays, canals, estuaries, lakes, and coastal areas. They move freely between freshwater, salt water, and brackish water.	Suitable habitat observed on site.
Florida Mouse ² (<i>Podomys floridanus</i>)		SSC	Xeric Uplands (ecological communities with well drained sandy soils) such as sandhill and scrub	No suitable habitat observed on site.
Plants				
Giant Orchid (<i>Pteroglossaspis ecristata</i>)		T	Sandhill, scrub, pine flatwoods, pine rocklands.	No suitable habitat observed on site.
Nodding Pinweed (<i>Lechea cernua</i>)		T	Sand pine scrub	No suitable habitat observed on site.
Sand Butterfly Pea (<i>Centrosema arenicola</i>)		E	Sandhill, scrubby flatwoods, dry upland woods.	No suitable habitat observed on site.

TABLE 1 KEY

¹ No longer listed in Florida as of January 11, 2017, but is part of the *Imperiled Species Management Plan*

² No longer listed in Florida as of January 11, 2017. Commensal species with gopher tortoise.

FEDERAL LEGAL STATUS: Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

E = Endangered: species in danger of extinction throughout all or a significant portion of its range.

T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

STATE LEGAL STATUS: Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency. Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

C = Candidate for listing at the Federal level by the USFWS

FE = Listed as Endangered Species at the Federal level by the USFWS

FT = Listed as Threatened Species at the Federal level by the USFWS

FT(S/A) = Federal Threatened due to similarity of appearance

ST = State population listed as Threatened by the FWC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

SSC = Listed as Species of Special Concern by the FWC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Florida Ecological Services Field Office

777 37th St

Suite D-101

Vero Beach, FL 32960-3559

Phone: (352) 448-9151 Fax: (772) 562-4288

Email Address: fw4flesregs@fws.gov

<https://www.fws.gov/office/florida-ecological-services>

In Reply Refer To:

08/21/2025 13:57:36 UTC

Project Code: 2025-0138990

Project Name: City of Clearwater

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Please include your Project Code, listed at the top of this letter, in all subsequent correspondence regarding this project. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Marine Mammals

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Florida Ecological Services Field Office

777 37th St

Suite D-101

Vero Beach, FL 32960-3559

(352) 448-9151

PROJECT SUMMARY

Project Code: 2025-0138990
Project Name: City of Clearwater
Project Type: Acquisition of Lands
Project Description: Site Assessment for future development / sale
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@27.98426905,-82.78702217060811,14z>



Counties: Pinellas County, Florida

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
<p>West Indian Manatee <i>Trichechus manatus</i></p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat. <i>This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.</i></p> <p>Species profile: https://ecos.fws.gov/ecp/species/4469 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GAMHBYKTUND7PE6WBK3GSBYXUA/documents/generated/7281.pdf</p>	Threatened

BIRDS

NAME	STATUS
<p>Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i></p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477</p>	Threatened
<p>Everglade Snail Kite <i>Rostrhamus sociabilis plumbeus</i></p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7713</p>	Endangered
<p>Rufa Red Knot <i>Calidris canutus rufa</i></p> <p>There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864</p>	Threatened
<p>Whooping Crane <i>Grus americana</i></p> <p>Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758</p>	Experimental Population, Non-Essential
<p>Wood Stork <i>Mycteria americana</i></p> <p>Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8477 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GAMHBYKTUND7PE6WBK3GSBYXUA/documents/generated/6954.pdf</p>	Threatened

REPTILES

NAME	STATUS
<p>Eastern Indigo Snake <i>Drymarchon couperi</i></p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/646</p>	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

MARINE MAMMALS

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

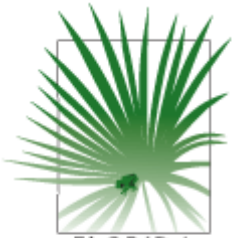
The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

-
1. The [Endangered Species Act](#) (ESA) of 1973.
 2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
 3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME
West Indian Manatee <i>Trichechus manatus</i> Species profile: https://ecos.fws.gov/ecp/species/4469

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Brennan Hagan
Address: 1675 Lee Rd
City: Winter Park
State: FL
Zip: 32789
Email: brennan.hagan@terracon.com
Phone: 8504454041



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

FLORIDA
Natural Areas
INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

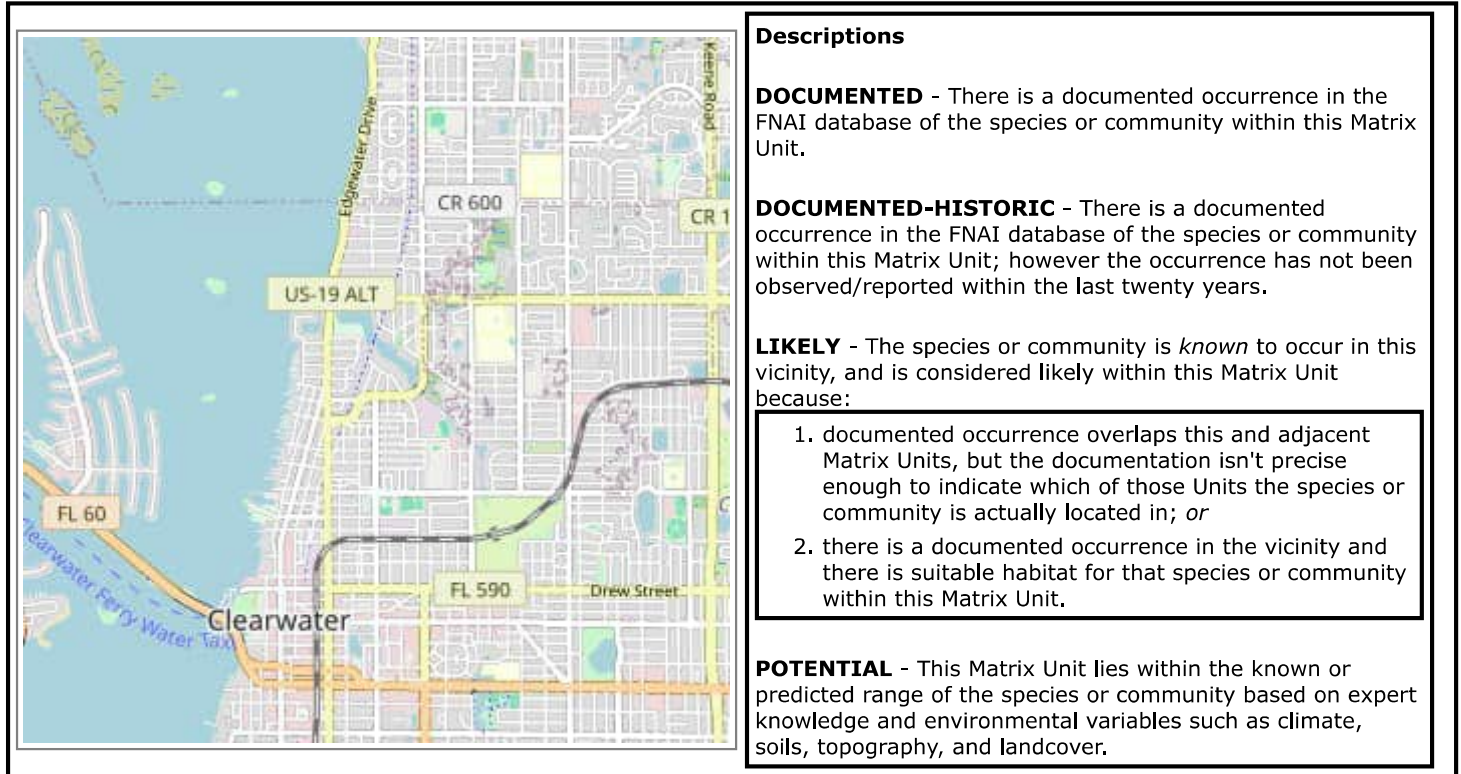
UNOFFICIAL REPORT

Created 8/21/2025

(Contact the FNAI Data Services Coordinator at 850.224.8207 or
kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 2 Matrix Units: 20569 , 20570



Matrix Unit ID: 20569

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

1 **Likely** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mycteria americana</i> Wood Stork	G4	S2	T	FT

Matrix Unit ID: 20570

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mycteria americana Wood Stork	G4	S2	T	FT
Onthophagus aciculatus Sandyland Onthophagus Beetle	G2	S2	N	N

Matrix Unit IDs: 20569 , 20570**17 Potential** Elements Common to Any of the 2 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Acipenser oxyrinchus desotoi Gulf Sturgeon	G3T2T3	S2?	T	FT
Ammodramus maritimus Scott's Seaside Sparrow	G4T3	S3	N	ST
Centrosema arenicola sand butterfly pea	G2Q	S2	N	E
Coprochelys agassizii Gopher Tortoise	G2	S2	N	N
Dermochelys coriacea Leatherback Sea Turtle	G2	S2	E	FE
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Eretmochelys imbricata Hawksbill Sea Turtle	G3	S1	E	FE
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Heterodon simus Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua nodding pinweed	G3	S3	N	T
Pandion haliaetus Osprey	G5	S3S4	N	N
Peromyscus floridanus Florida Mouse	G3	S3	N	N
Pteroglossaspis ecrinata giant orchid	G2G3	S2	N	T
Rallus longirostris scottii Florida Clapper Rail	G5T3?	S3?	N	N
Selonodon floridensis Florida Cebrionid Beetle	G2G4	S2S4	N	N
Setophaga discolor paludicola Florida Prairie Warbler	G5T3	S3	N	N
Trichechus manatus latirostris Florida Manatee	G2G3T2	S2S3	T	N

Disclaimer

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. Inventory data are designed for the purposes of conservation planning and scientific research and are not intended for use as the primary criteria for regulatory decisions.

Unofficial Report

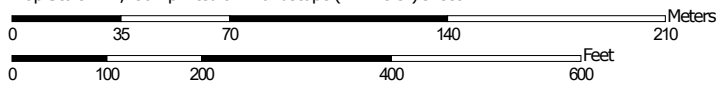
These results are considered unofficial. FNAI offers a [Standard Data Request](#) option for those needing certifiable data.

WLF - Gopher Tortoise Burrowing Suitability—Pinellas County, Florida



Soil Map may not be valid at this scale.

Map Scale: 1:2,430 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

8/21/2025
Page 1 of 5






MAP LEGEND

Area of Interest (AOI)






 Area of Interest (AOI)

Soils






Soil Rating Polygons

 Unsuitable
 Less suited
 Moderately suited
 Highly suited
 Not rated or not available


Soil Rating Lines

 Unsuitable
 Less suited
 Moderately suited
 Highly suited
 Not rated or not available

Soil Rating Points





 Unsuitable
 Less suited
 Moderately suited
 Highly suited
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways

 US Routes
 Major Roads
 Local Roads
Background
 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pinellas County, Florida
 Survey Area Data: Version 21, Aug 23, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

WLF - Gopher Tortoise Burrowing Suitability

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
13	Immokalee soils and Urban land	Less suited	Immokalee (50%)	Water table (0.22)	7.4	56.2%
16	Matlacha and St. Augustine soils and Urban land	Moderately suited	Matlacha (33%)	Content of rock fragments (0.55)	3.2	24.2%
17	Myakka soils and Urban land	Less suited	Myakka (50%)	Water table (0.22)	0.9	7.0%
29	Tavares fine sand-Urban land complex, 0 to 5 percent slopes	Highly suited	Tavares (43%)		0.4	3.1%
			Pomello (6%)			
			Cassia (5%)			
			Apopka (4%)			
			Astatula (3%)			
			Adamsville (2%)			
32	Wulfert muck, tidal, 0 to 1 percent slopes	Unsuitable	Wulfert, tidal (90%)	Water table (0.00)	1.2	9.4%
				Flooding (0.00)		
				Texture (0.50)		
			Kesson, tidal (10%)	Water table (0.00)		
				Flooding (0.00)		
99	Water	Not rated	Water (100%)		0.0	0.1%
Totals for Area of Interest					13.1	100.0%

Rating	Acres in AOI	Percent of AOI
Less suited	8.3	63.2%
Moderately suited	3.2	24.2%
Unsuitable	1.2	9.4%
Highly suited	0.4	3.1%
Null or Not Rated	0.0	0.1%
Totals for Area of Interest	13.1	100.0%

Description

This soil interpretation is intended to provide ratings based on the dominant soil characteristics that influence the suitability of the soil for excavation, maintenance, and preservation of burrows by gopher tortoises (*Gopherus polyphemus*). The information allows the user to identify areas of potentially suitable habitat area prior to the application of conservation practices. The ratings are for the soils in their natural condition and do not consider present land use, existing vegetation, water sources, and the presence or absence of wildlife in the area. The presence or absence of a species is determined at the local level and by many factors including soil characteristics.

The gopher tortoise (*Gopherus polyphemus*) is a burrowing reptile that inhabits open pine forests throughout the southeastern United States. Historically, typical gopher tortoise habitat consisted of open, frequently burned longleaf pine or longleaf pine/scrub oak uplands and flatwoods on moderately well drained to xeric soils. The burrows of a gopher tortoise are the habitat and center of normal feeding, breeding, and sheltering activity. Gopher tortoises excavate and use more than one burrow for shelter beneath the ground surface. Burrows, which may extend for more than 30 feet, provide shelter from canid predators, winter cold and summer heat.

The soil criteria that are taken into account in this soil interpretation are those that have been determined to have the most effect on burrow excavation, maintenance, and preservation. These include the soil texture, percent coarse fragments, depth to a restrictive layer or layer with greater than or equal to 35% clay, ponding or flooding frequency, slope, and depth to seasonal high water table.

Each soil criteria is assigned a numerical rating between 0 and 1. In this rating, 1 represents more suitable soil characteristics, and 0 represents less suitable soil characteristics. Each criterion is calculated separately and the lowest rating is reported as the overall soil suitability rating, representing the most limiting factor in the soil's suitability for gopher tortoise burrows.

Rating classes have been defined as follows:

Highly suited (numerical rating 0.95-1): These soils have no restrictions for use and are favorable for burrowing by gopher tortoise. Colonization and population densities may be above average if other habitat factors are not limiting.

Moderately suited (numerical rating 0.5-0.95): These soils are suitable and somewhat favorable for burrowing by gopher tortoise. Some restrictive features may limit the use of the site to a minor extent. Colonization and population densities may be average to above for the area if the other habitat requirements are met.

Less suited (numerical rating 0.05-0.5): These soils have characteristics that may limit establishment, maintenance, or use of the site by gopher tortoise. Colonization and population densities may be below average or restricted in the area due to the limiting factors even though all of the other species habitat requirements are met.

Unsuitable (numerical rating 0-0.05): These soils have characteristics that may limit establishment, maintenance, or use of the site by gopher tortoise. Areas of

included soils with better drainage may provide suitable soil properties in some locations.

Not Rated: Miscellaneous areas are given a not rated status.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Citations:

U.S. Fish and Wildlife Service and Natural Resources Conservation Service. 2012. Gopher Tortoise (*Gopherus polyphemus*) Soil Classifications for the Federally Listed Range using the National Soil Information System Database, Version 1.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Printer Friendly View

Download as PDF

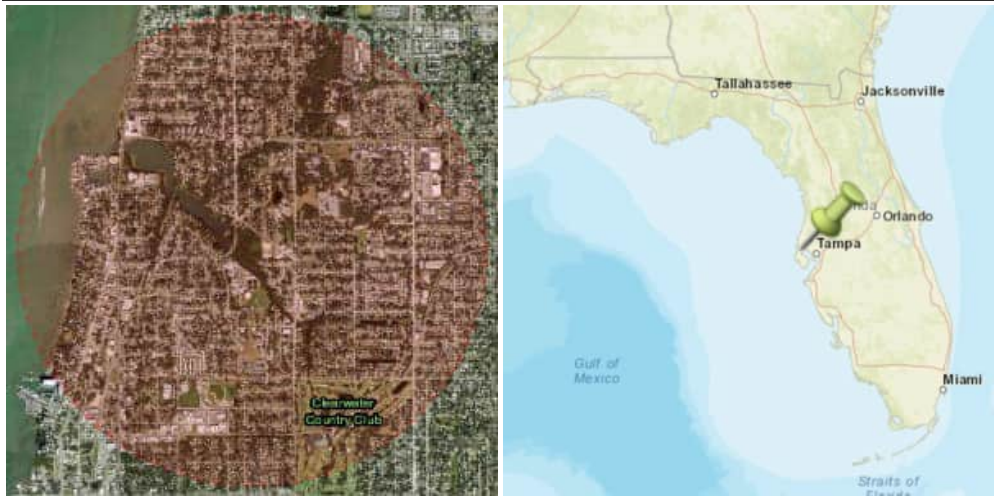


Florida Department
of Environmental Protection



Map Direct AIR (Area of Interest Report)
Standard Map

Point of Interest: 27°58'59.9045" x -82°47'11.8812" 27.983306818202546 x -82.78663367667023 Search Radius: 1 mile Report Created on Thu Aug 21 2025 at 11:16:47 Map Direct v7.250819	Township/Range/Section: 29S15E3 Clearwater, Pinellas County 33755 FDEP Regulatory District: SOUTHWEST DISTRICT Water Management District: SWFWMD FL House District 58 :: FL Senate District 21 US Congressional District 13 HUC Basin Area: Crystal-Pithlachascotee Waterbody ID: 1567 State Land DM ID:
---	--



Search Result Summary

Features Found	Data Layer	Metadata	Spreadsheet
0	Florida Woodstork Nesting Colonies	Layer Information	--
1	Florida Wood Stork Foraging Areas	Layer Information	Download as Spreadsheet
1	Florida Wood Stork Foraging Areas	Layer Information	Download as Spreadsheet
0	Wood Stork Active Nesting Colonies - 2500 Foot Buffer	Layer Information	--
0	Florida Woodstork Nesting Colonies	Layer Information	--

Search Result Details

FLORIDA WOOD STORK FORAGING AREAS: 1 FOUND. [BACK TO SEARCH RESULTS SUMMARY](#)

# 1 Of 1 From Florida Wood Stork Foraging Areas	
OBJECTID 1	1
OBJECTID	1
SHAPE LENG	34.986696
SHAPE.AREA	74429233929.5591
SHAPE.LEN	3670591.666836

FLORIDA WOOD STORK FORAGING AREAS: 1 FOUND. [BACK TO SEARCH RESULTS SUMMARY](#)

# 1 Of 1 From Florida Wood Stork Foraging Areas	
OBJECTID 1	1

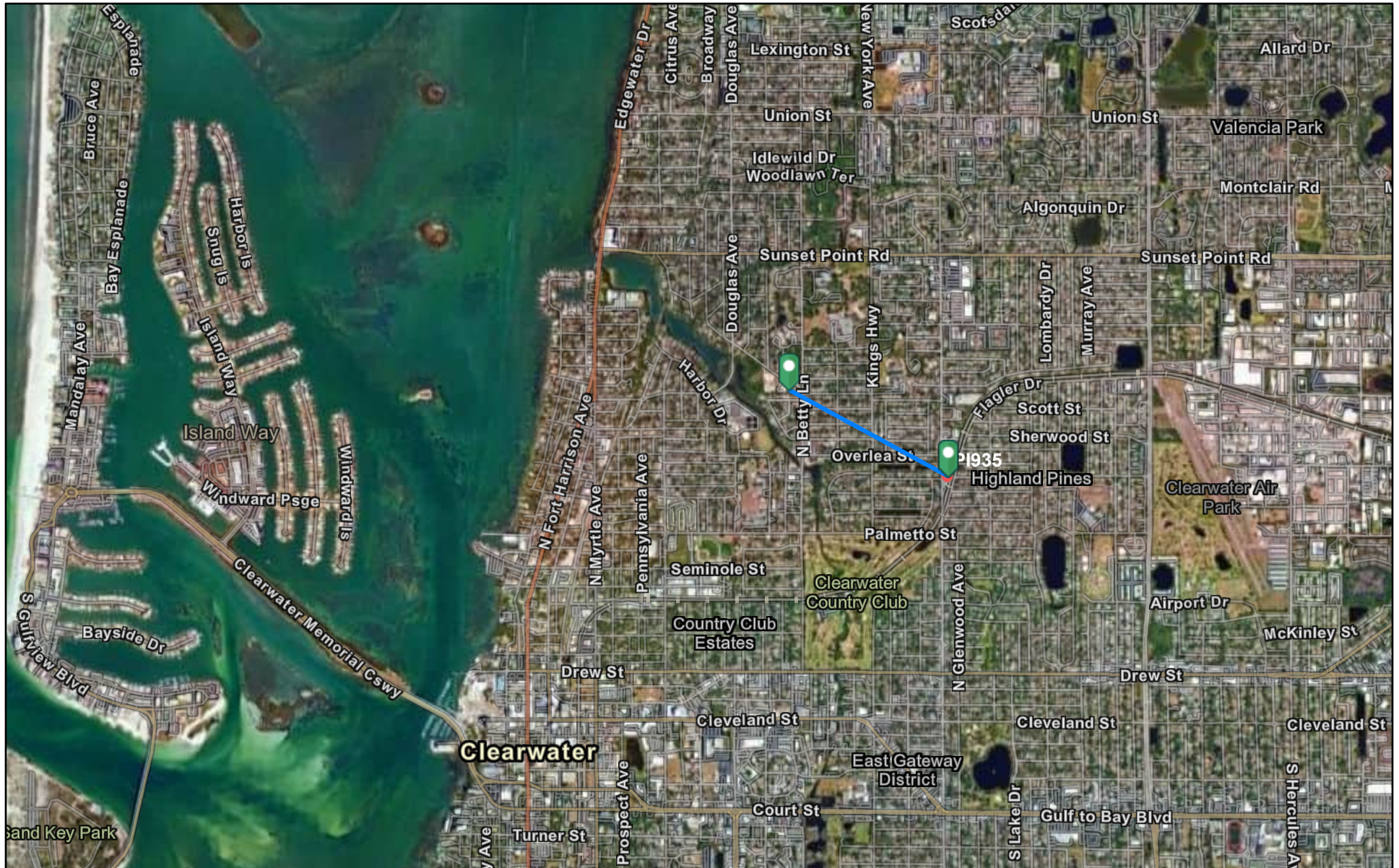
OBJECTID	1
SHAPE LENG	34.986696
SHAPE.AREA	74429233929.5591
SHAPE.LEN	3670591.666836

No Results Found:

- Florida Woodstork Nesting Colonies
- Florida Woodstork Nesting Colonies
- Wood Stork Active Nesting Colonies - 2500 Foot Buffer

*** END OF REPORT ***

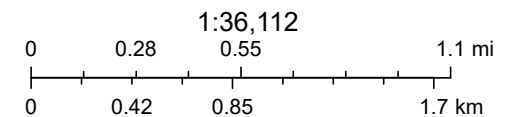
EagleWatch Map



8/21/2025, 1:04:05 PM

Bald Eagle Nest Locations

● unmonitored



Google, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

ArcGIS Web AppBuilder

Google | Esri Community Maps Contributors, County of Pinellas, FDEP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS |

Appendix D

Resumes

Brennan Hagan

SENIOR PROJECT MANAGER – ENVIRONMENTAL PLANNING

PROFESSIONAL EXPERIENCE

Mr. Hagan has 8.5 years of experience as an environmental professional, specializing in environmental permitting, wetland delineation, environmental planning, arboricultural services, and listed species services in Florida. His expertise includes wetland delineation, wetland permitting and compliance, design, implementation, and design of wetland mitigation plans, sovereign submerged land authorizations, hydrologic surveys, sand skink surveys, tree inventories, tree health/risk assessments, acoustic bat surveys, southeastern American kestrel surveys, Audubon's crested caracara surveys, Florida burrowing owl survey/relocations, and gopher tortoise surveys/relocations. Experience also includes permitting coordination with Florida Fish and Wildlife Conservation Commission (FWC), the Florida Department of Environmental Protection (FDEP), Miami-Dade County DERM, Broward County, US Fish and Wildlife Service (USFWS), and all Water Management Districts (WMD) across the state.

PROJECT EXPERIENCE

Horizon West Orange County Regional Library – Wetland Permitting & Listed Species Services

Project Manager and Senior Staff Scientist for this Orange County regional Library. Terracon conducted multiple services for this project which included a wetland delineation, listed species assessment, wetland permitting with SJRWMD, formal sand skink survey and permitting with USFWS, gopher tortoise survey, permitting with FWC, and relocation activities.

Bass Pro Okeechobee Fishing Resort – Wetland Permitting & Crested Caracara Survey

Led efforts to obtain a formal wetland determination with SFWMD associated with this site. In addition, was the project manager and primary observer on the crested caracara survey from January 2023 – April 2023.

South Fork High School – Natural Resources Assessment, Wetland Permitting & Conservation Easement Amendment

Project Manager for this multi-phase project in coordination with Martin County School Board. The first phase of this project included listed species assessment and wetland delineation. The second phase involved amending the existing conservation easement onsite. Efforts included initial wetland evaluation based on a UMAM analysis, creating a mitigation plan & monitoring plan, facilitate agency field visits, and prepare project documents for submittal to SFWMD.

Acadia-Orlando Health Apopka – Natural Resources Assessment, Listed Species Services, & Wetland Permitting

Project Manager for this healthcare project located in Apopka, Florida. Completed multiple due diligence level assessments that identified wetlands and listed species concerns. Consulted with SJRWMD and USACE to receive environmental permits on the site related to wetland impacts. Lead survey design and implementation of a sand skink coverboard survey and associated USFWS consultation for the project. Additionally, conducted a 100% gopher tortoise survey, consulted FWC for a relocation permit, and conducted a relocation of several burrows.



EDUCATION

Bachelor of Science,
Interdisciplinary Studies –
Environmental Science
University of Central Florida, 2018

Master of Science, Urban &
Regional Planning, University of
Central Florida, 2021

Graduate Certificate, Emergency
Management & Homeland
Security, University of Central
Florida, 2021

YEARS WITH TERRACON: 4
YEARS WITH FL REGULATORY
AGENCIES: 4.5

CERTIFICATIONS

Professional Wetland Scientist
(PWS)

Authorized Gopher Tortoise Agent

Registered Florida Burrowing Owl
Agent

Florida Stormwater, Erosion, and
Sediment Control Inspector, Tier II

40-hour Hazardous Waste
Operations and Emergency
Response Certification

Wildland Firefighter

ADDITIONAL TRAINING

40 hours of Advanced Wetland
Delineation Training by FDEP.

Acoustic Bat Survey Training -
BCM

AFFILIATIONS

Society of Wetland Scientists

Central Florida Engineering Society
- Conservation and Environmental
Quality

Central Florida Association of
Environmental Professionals

Brennan Hagan (continued)

Orange County Public Schools – Continuing Contract

Project Manager for this continuing environmental consulting services contract with Orange County Public Schools. The scope of services includes sand skink surveys, burrowing owl surveys, consultation with USFWS, gopher tortoise burrow surveys and permitting, wetland delineations and permitting, and consultation with the Orange County Environmental Protection Division, FWC, and USFWS.

Seminole County Public Schools – Continuing Contract

Project Manager for this continuing environmental consulting services contract with Seminole County Public Schools. Previous projects under this contract include several gopher tortoise relocations utilizing bucket trapping methodology at Keeth Elementary School and Sterling Park Elementary School. Additionally, Terracon has assisted with migratory bird studies and nest removal efforts at all Seminole County high schools.

Duke Energy Falmouth – Southeastern American Kestrel Survey & Gopher Tortoise Relocation

The lead project scientist on a southeastern American kestrel survey on over 500 acres in panhandle Florida. Created the survey design, managed a project team to execute the survey, prepared the assessment report, and facilitated the permitting phase of the project. Authorized Gopher Tortoise Agent responsible for surveys, bucket trapping, and relocation activities. The lead agent onsite for multiple relocation efforts managing a team of six people and three backhoe operators.

Duke Energy Hildreth – Gopher Tortoise Relocation

Authorized Gopher Tortoise Agent responsible for surveys, bucket trapping, and relocation activities. Lead agent onsite for multiple relocation efforts managing a team of eight people and three backhoe operators.

Advent Health – City of Orlando Environmental Assessment / Parcel Annex

Project Manager for this environmental assessment for a City of Orlando parcel annexation. The scope of services included wetland delineation, wetland functional assessment, Q-Wet Ranking score, and a listed species assessment. In addition, the project included the annexation requirements set forth within the City of Orlando Code of Ordinance.

Lake Placid Solar – Listed Species Surveys

Staff Scientist on this solar farm project in Highlands County. Conducted American Kestrel surveys along with multiple other different listed species including Scrub Jay, Gopher Tortoise, Sand Skinks, and Crested Caracara.

Apopka CUP Monitoring – Wetland/Lake Monitoring (2021-present)

Project manager for this wetland/lake monitoring effort for four lakes located in the city limits of Apopka. Led efforts to conduct monitoring efforts on four lakes to study the effects of ground water drawn down in the area. Reports were compiled with the results to submit to SJRWMD and stay within compliance of the permit.

ADDITIONAL EXPERIENCE

Land Management Reviews (LMRs)

Participated in land management reviews of multiple Florida State Parks including Tiger Bay State Park, Blue Springs State Park, and Hontoon Island State Park.

Central Florida Water Initiative

Conducted vegetative and hydrologic surveys at various management areas around Central Florida. These surveys required coordination between SFWMD, SWFWMD, and SJRWMD.

Prescribed Fire

Participated in multiple controlled burns on SFWMD property.

Brian P. Brandon, PWS

Environmental Department Manager III

PROFESSIONAL EXPERIENCE

Mr. Brandon's experience includes serving in leadership roles at consulting firms in Florida for the past decade, having expert level experience in wetland delineation, wetland permitting and compliance, wetland functional assessment/mitigation plans, wetland monitoring, habitat assessments, habitat conservation plans, floral/vegetation surveys, threatened and endangered species surveys, migratory bird evaluations, wildlife monitoring, creation and maintenance of avian protection programs, tribal and agency consultation pursuant to the National Environmental Policy Act (NEPA), Phase I Environmental Site Assessments (ESA), Asbestos sampling, Lead-based Paint sampling, and other environmental assessment and monitoring techniques. His experience also includes coordination with the United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), Federal Communications Commission (FCC), various state and tribal historic preservation offices (HPOs), the Florida Department of Environmental Protection (FDEP), United States Army Corps of Engineers (USACE), all 5 Florida Water Management Districts, and dozens of county and municipal representatives for various permitting and compliance projects.

PROJECT EXPERIENCE

Durando Yeehaw Ranch – Yeehaw Junction, Florida

Senior Staff Scientist and Project Manager for land analysis that includes demography of saw palmetto stands, agricultural soil analysis, and land use analysis to determine the correlation between palmetto densities and productivity and available soil nutrients on site. The 12,000-acre project site was proposed to be utilized for saw palmetto propagation and harvesting.

Placid Solar Projects – Highlands County

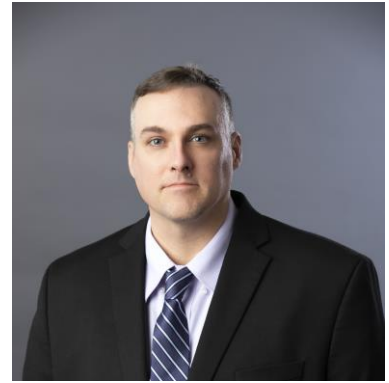
Senior Staff Scientist and Project Manager for a proposed 2,000 acre solar farm. Scope of services includes wetland delineation and permitting assistance, gopher tortoise and burrowing owl surveys, formal surveys for crested caracara, Florida scrub-jay, Florida bonneted bat, sand skinks and blue-tailed mole skinks, Southeastern American kestrel, and agency consultation.

Endangered Plant Surveys – Lake County Florida

Conducted surveys for the federally endangered Lewton's polygala and clasping warea on an outparcel owned by Seminole State Forest. Surveys were conducted in pre-established plots. The target species were identified, and the growth status was recorded. All collected data was used to monitor yearly population growth, correlate impacts of prescribed fire, and determine if detrimental effects from invasive herbs affected rare plant species population. Work was conducted as a volunteer for the Florida Forest Service.

Endangered Plant Surveys – Polk County, Florida

Conducted demography survey on the state endangered blushing scrub balm at a confidential site in Polk County, Florida. Surveys consisted of measuring



EDUCATION

Bachelor of Science, Biology
University of Central Florida, 2012

Graduate Certificate, Wetlands
and Water Resource Management,
University of Florida 2020

YEARS WITH TERRACON: 5
YEARS WITH OTHER FIRMS: 6

CERTIFICATIONS

Professional Wetland Scientist
(PWS) No. 3405

FWC Authorized Gopher Tortoise
Agent No. GTA-14-00004D

FWC Burrowing Owl Authorized
Agent No. RAG-21-00005

Certified Florida Master Naturalist

PROFESSIONAL TRAINING

38-Hour USACE Wetland
Delineation Training

AFFILIATIONS

Florida Native Plant Society –
Tarflower Chapter

National Association of
Environmental Professionals

Ecological Society of America

National Audubon Society

Florida Association of
Environmental Soil Scientists

Society of Wetland Scientists



and recording plant height and width, and counting stems, flowers, and seeds. The data was used to determine germination rates in response to the prescribed fire regiment of the area.

Grand Medina Resort (Everest Place) – Osceola County, Florida

Project Manager and Senior Ecologist for conducting annual wetland monitoring for Consumptive Use Permit with the City of Apopka. The scope of work included bringing the CUP permit into compliance by conducting wetland monitoring for a two-year period; collecting GPS data of water elevations at four lakes, analyzing vegetative cover, and making a correlation between annual rainfall data, piezometer data, and visual observations to determine if groundwater drawdown is occurring as the result of the City's water usage.

ADDITIONAL EXPERIENCE

Biological Assessments - Alabama, Florida, Georgia, North Carolina, South Carolina*

Project Manager and Lead Biologist. Analyzed habitat structure and performed surveys to determine anticipated impacts to threatened and endangered species and species of special concern pursuant to Section 7 of the Endangered Species Act. Species-specific surveys include gopher tortoise, migratory bird evaluations, bats, red cockaded woodpeckers, Florida scrub-jays, and various vegetation surveys. Consulted with lead agency for determinations of "no adverse effect" findings and coordinated permitting when necessary.

Wetland Delineations –Florida, Georgia, Maryland*

Project Manager and Lead Wetland Scientist. Determined the landward extent of wetlands and other surface waters in accordance with Florida Administrative Code 62-340 and the Army Corps of Engineers wetland delineation methodology. Delineated wetland boundaries and coordinated Environmental Resource Permits (ERP's), Nationwide Permits, and Individual Permits with the FDEP, USACE, and all Water Management Districts.

Migratory Bird Evaluations and Avian Protection Programs – Nationwide*

Director of Migratory Bird Services. Managed and directed a team of scientists to conduct evaluations/formal surveys of Osprey, Bald Eagle, Red-tailed Hawk, Great Horned Owl, Crested Caracara, Crows, Ravens, Eastern Kingbirds, and other migratory birds for compliance with the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act, and Endangered Species Act. Determined nest status and facilitated permit actions. Created and maintained Avian Protection Programs for various national clientele.