

Gopher Tortoise & Florida Burrowing Owl Survey Report

North Palm Beach Country Club

August 29, 2024 | Project No. HD247027



Prepared For:

CPZ Architects
Plantation, Florida

Site Address:

951 US-1
North Palm Beach, Florida



Nationwide

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- Environmental
- Facilities
- Geotechnical
- Materials



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August 29, 2024

CPZ Architects
4316 West Broward Boulevard
Plantation, Florida 33317

Attn: Ms. Heidi Rodriguez, AIA
P (754) 428-1299
E heidi@cpzarchitects.com

RE: Gopher Tortoise & Florida Burrow Owl Survey Report

North Palm Beach Country Club
951 US-1
North Palm Beach, Palm Beach County, Florida
Terracon Project No. HD247027

Dear Ms. Rodriguez:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Gopher Tortoise & Florida Burrowing Owl Survey Report for the above-referenced site. The scope of this assessment included conducting a 100% Gopher Tortoise and 100% Florida Burrowing Owl survey within suitable habitat on the site.

This work was performed in general accordance with the scope of services outlined in the Agreement for Services May 4, 2024. This report was prepared for the exclusive reliance of CPZ Architects("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

A handwritten signature in black ink that reads "Brennan Hagan".

For: Brennan Hagan, PWS
Group Manager
(321) 203-7402
Brennan.hagan@terracon.com

A handwritten signature in black ink that reads "Brian P. Brandon".

Brian P. Brandon, PWS
Sr. Associate/Department Manager
(407) 740-6739
Brian.brandon@terracon.com

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1.0 Introduction

The site consists of a ±4.55-acre portion of a ±146.27-acre parent parcel that contains a golf course located at 951 US-1 (identified as Palm Beach County Parcel No. 68-43-42-08-00-000-1080) in North Palm Beach, Florida. The site primarily consists of existing golf courses, maintenance facility, a retention pond, and gravel driveways and parking areas. It is the understanding of Terracon that the site will be developed with an improved maintenance facility and associated infrastructure. A site location map is provided in Appendix A as Exhibit 1.

Terracon was provided pictures of the site during a pre-proposal site visit that included pictures of potentially occupied burrows. Based on analyzing these photos, Terracon recommended a gopher tortoise (*Gopherus polyphemus*) and Florida burrowing owl (*Athene cunicularia floridana*) survey be conducted on the site to confirm the absence or presence of the protected species. The following sections outline Terracon’s methodologies, findings, and conclusions resulting from the survey.

2.0 Methodology

2.1 100% Gopher Tortoise Survey

Pedestrian surveys are conducted utilizing methodologies as outlined in the Florida Fish and Wildlife Conservation Commission (FWC) 2008 (revised April 2023) *Gopher Tortoise Permitting Guidelines*. Surveys are conducted by FWC Authorized Gopher Tortoise Agents in accordance with the FWC’s Methods for Burrow Surveys on Development (Donor) and Recipient Sites; and are conducted within 100% of all suitable gopher tortoise habitat found on the site. All potentially occupied and abandoned gopher tortoise burrows are located and marked in the field using high visibility flagging tape. The locations of the burrows are recorded utilizing an Arrow 100+ handheld GPS unit with submeter accuracy.

2.2 Florida Burrowing Owl Survey

A project planning burrowing owl survey is conducted within suitable habitat on site to determine the estimated population and location of the owls/burrows in these areas. Suitable habitat consists of areas with well-drained sandy soils as determined by the United States Department of Agriculture (USDA), with low vegetation less than 5 inches in height and good visibility around the burrow. Areas on site with well-drained soils and low vegetation are selected as survey areas. The survey is conducted for larger-scale projects (greater than 1 acre) in accordance with the FWC *Species Conservation Measures and Permitting Guidelines* for the Florida burrowing owl. All potentially occupied and abandoned owl burrows are located and marked in the field using high visibility pin flags. The locations of the burrows are recorded utilizing a GPS unit with sub-meter accuracy. The burrow locations are included on a listed species survey map.

A burrowing owl habitat assessment is then conducted pursuant to the FWC *Species Conservation Measures and Permitting Guidelines* to quantify potential habitat near the burrows. A GIS-based analysis is conducted to establish a 1,970-foot radius around each potentially occupied burrow. All potential foraging habitat (areas with low vegetation and good visibility) within the established radii is then

quantified and overlaid with the preliminary site plan to determine the percentage of habitat expected to be impacted by development, and if there are any direct impacts to burrows. Greater than 50% loss of foraging habitat is considered to be “significant habitat modification”. Any direct impacts to potentially occupied burrows, development within 10 feet of a burrow (or 33 feet during nesting season), and significant habitat modification all require an incidental take permit form the FWC.

2.3 Land Cover

An assessment of land cover of the site was conducted utilizing the Florida Cooperative Land Cover (CLC) system to identify and categorize on site land cover. The data used to produce this map was derived from the CLC system, which in turn, was derived from the FWC, FNAI, and the water management districts land classification systems. The CLC Map for the site is included as Exhibit 4 (Appendix A).

3.0 Existing Site Conditions

3.1 Existing Site Conditions

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

- **Golf Course** (Mapped CLC Code – 182132) ±4.55 acres: The site is located with the center portion of the North Palm Beach County Country Club. The site contained landscaped areas for a golf course, maintenance facility, gravel parking lots and driveways, and a retention pond. Vegetation within the subject area consisted of cabbage palm (*Sabal palmetto*), strangler fig (*Ficus aurea*), banyon tree (*Ficus benghalensis*), and sand live oak (*Quercus geminata*).

3.2 Soil Survey

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

- **35 – Quartzipsamments, shaped, with 0 to 5 percent slopes:** This soil type is mapped within the entirety of the site. Quartzipsamments, shaped is derived from sandy marine deposits and is typical in rises on marine terraces. This soil is not categorized as a hydric soil (well drained) and typically has a depth to water table more than 80 inches bgs. A typical profile of this soil consists of an A horizon layer of fine sand from 0 to 6 inches and a C horizon layer of fine sand from 6 to 80 inches.

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*, Quartzipsamments, shaped (35) is not categorized as a hydric soil and was 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, Quartzipsamments, shaped (35) are rated ‘not rated’ and is therefore

not conducive for burrowing fauna such as the gopher tortoise (*Gopherus polyphemus*) or the Florida burrowing owl (*Athene cunicularia*). The NRCS Soil Survey Map for the site is included as Exhibit 3.

4.0 Gopher Tortoise & Florida Burrowing Owl Survey

On August 22, 2024, Mr. Brennan Hagan, an FWC Authorized Gopher Tortoise Agent (GTA-22-00021A) and Registered Burrowing Owl Agent (RAG-24-0006), conducted a 100% gopher tortoise burrow and Florida Burrowing Owl survey on the site utilizing methodologies as described in Appendix-D of the 2008 (revised April 2023) *Gopher Tortoise Permitting Guidelines and FWC's Florida Burrowing Owl Species Conservation Measure and Permitting Guidelines*. The pedestrian survey was performed by walking line transects, in 10-foot intervals across the site. The transect map is located in Appendix A.

Based on the results of the survey, no potentially occupied burrows for either the gopher tortoise or the Florida Burrowing Owl were identified with the study area. However, iguana burrows were identified on the fill pile in the northeastern portion of the site. Iguanas are considered invasive in Florida and will outcompete Florida burrowing owls and take over their burrows. Because no gopher tortoise or Florida burrowing owl burrows were identified on site, no additional consultation with FWC should be required as it relates to these species.

5.0 Conclusions and Recommendations

The site was investigated to identify the potential presence or absence of the gopher tortoise and Florida burrowing owl on the site. Based on the results of our assessment, Terracon makes the following conclusions and recommendations:

- Based on the results of the survey, no potentially occupied burrows for either the gopher tortoise or the Florida burrowing owl were identified with the study area. No additional consultation with FWC should be required as it relates to the gopher tortoise and Florida burrowing owl.

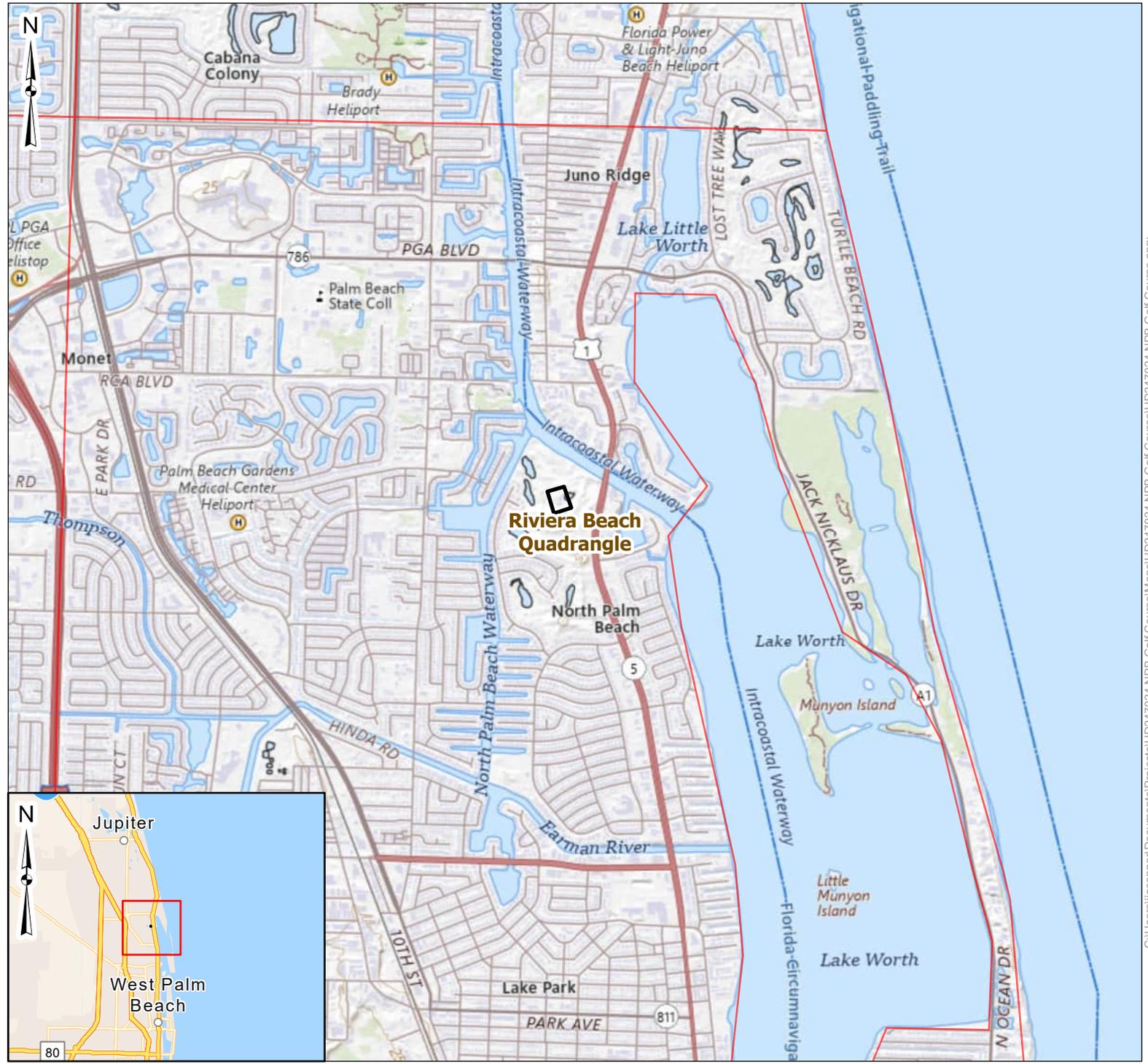
6.0 Standard of Care

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.

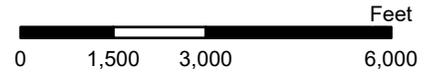
7.0 User Reliance

This report is prepared for the exclusive use and reliance of CPZ Architects. Use or reliance by any other party is prohibited without the written authorization of CPZ Architects 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 Services. The limitation of liability defined in the Agreement for Services is the aggregate limit of Terracon's liability to the client and all relying parties.

Appendix A Exhibits



- Project Area
- USGS 24K Grid Quadrangle
- Public Land Survey System (TRS)



DATA SOURCES:
 USGS Topographic Survey; Riviera Beach Quadrangle; ESRI - USGS Topographic Basemap & Bing Road Map

Project No.:
 HD247027
 Date:
 Aug 2024
 Drawn By:
 JO
 Reviewed By:
 BH



1675 Lee Road Winter Park, FL 32789
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Project Location

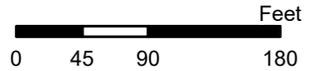
North Palm Beach Golf Course
 Gopher Tortoise Survey
 951 US-1
 North Palm Beach, Palm Beach County, Florida

Exhibit

1



 Project Boundary (4.55 ac.±)



DATA SOURCES:
 Palm Beach County - Parcels (2023); FDOT - Aerial Imagery (2021); ESRI - World Navigation Map

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Aerial Photograph

North Palm Beach Golf Course
 Gopher Tortoise Survey
 951 US-1
 North Palm Beach, Palm Beach County, Florida

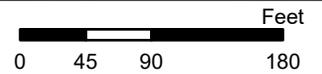
Exhibit

2

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-  Project Boundary (4.55 ac.±)
-  35 Quartzipsamments, shaped, 0 to 5 percent slopes (4.55 ac.±)



DATA SOURCES:
 USDA - NRCS Soils Survey of Palm Beach County, FL;
 FDOT - Aerial Imagery (2021); ESRI - World Navigation Map

Project No.:
 HD247027

Date:
 Aug 2024

Drawn By:
 JO

Reviewed By:
 BH



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NRCS Soils

North Palm Beach Golf Course
 Gopher Tortoise Survey
 951 US-1
 North Palm Bach, Palm Beach County, Florida

Exhibit

3

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 Project Boundary (4.55 ac.±)
 182132: Golf Course (4.55 ac.±)



DATA SOURCES:
 FLFWC & FNAI - Cooperative Land Cover (CLC v3.6);
 FDOT - Aerial Imagery (2021); ESRI - World Navigation
 Map

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Existing Land Use
 North Palm Beach Golf Course
 Gopher Tortoise Survey
 951 US-1
 North Palm Bach, Palm Beach County, Florida

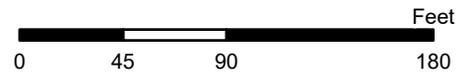
Exhibit
4



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Gopher Tortoise Burrows

- Abandoned
- Potentially Occupied
- General Collection Points
- 10 ft Transects
- Project Boundary (4.15 ac.±)



DATA SOURCES:
 Terracon - Gopher Tortoise Survey; FDOT - Aerial Imagery (2021); ESRI - World Navigation Map

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Reviewed By:	BH

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Gopher Tortoise Locations
North Palm Beach Golf Course Gopher Tortoise Survey 951 US-1 North Palm Bach, Palm Beach County, Florida

Exhibit
5

Appendix B

Photos



Photo #1 Disturbed soils



Photo #2 Disturbed soils



Photo #3 Habitat adjacent to site



Photo #4 Iguana burrow in fill pile



Photo #5 Fill pile on site



Photo #6 Retention pond

Appendix C

Resumes

Brennan Hagan

GROUP MANAGER – ENVIRONMENTAL PLANNING

PROFESSIONAL EXPERIENCE

Mr. Hagan has 8 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, reviewing/interpreting municipal code, southeastern American kestrel survey, Audubon's crested caracara surveys, Florida burrowing owl survey/relocations, and gopher tortoise surveys/relocations. In addition, Mr. Hagan has experience conducting Phase 1 site visits and writing Phase 1 reports per the ASTM standards. Experience also includes coordination with Florida Fish and Wildlife Conservation Commission (FWC), the Florida Department of Environmental Protection (FDEP), several local municipalities, US Fish and Wildlife Service, 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

Assisted in obtaining a formal wetland determination with SFWMD associated with this site. In addition, was the 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.

Tampa VA Regional – Natural Resources Assessment & Wetland Permitting

Project Manager for this two-phase project located in Tampa, Florida. The first phase of the project included a listed species assessment and wetland delineation. The second phase of the project included permitting efforts with Hillsborough County EPC, SWFWMD, and FDEP. Efforts included pre-application meetings, application preparation, document submittals, and facilitating agency field visits.



EDUCATION

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

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

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

YEARS WITH TERRACON: 3
YEARS WITH REGULATORY AGENCIES: 5

CERTIFICATIONS

Wildland Firefighter

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

Professional Wetland Scientist (PWS)

Authorized Gopher Tortoise Agent

Registered Florida Burrowing Owl Agent

ADDITIONAL TRAINING

40 hours of Advanced Wetland Delineation Training by FDEP delineation team.

40-hour Hazardous Waste Operations and Emergency Response Certification

AFFILIATIONS

Society of Wetland Scientists

Urban Knights (UCF)

Central Florida Association of Environmental Professionals

** Work performed prior to joining Terracon.*

Explore with us



Brennan Hagan (continued)

Duke Energy Falmouth – Southeastern American Kestrel Survey

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.

Duke Energy Falmouth – 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 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.

Orange County Public Schools – Continuing Contract

Staff Scientist for this continuing environmental consulting services contact with Orange County Public Schools. The scope of services include 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.

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.

Marion County Airport – Due Diligence

Project manager for this due diligence level project. Conducted due diligence level assessments across over ±1,650 acres of land. Assessments varied from wetlands assessments, listed species assessments, and habitat identification.

Shingle Creek Regional Trail – Application Processor*

The lead environmental analyst at SFWMD on this multi-county regional recreation trail. This project consisted of multiple field reviews and planning around large wetland systems such as Shingle Creek and Lake Tohopekaliga. Worked in consultation with multiple consulting firms, Orange County, Osceola County, City of Kissimmee, and the City of Orlando.

ADDITIONAL EXPERIENCE

Land Management Reviews (LMRs)

Participated in land management reviews of Florida State Parks including Tiger Bay State Park, Blue Springs State Park, and Hontoon Island State Park. FDEP participated to review how the State Park was being ecologically managed and offered input on practices that we working or not.

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.