

Environmental Survey Report

Wetland Delineation and Listed Species

Volusia County, Florida Property Address; 401 South Volusia Avenue in Orange City
Alt Key Parcel 2374802

Prepared for:

John Flaherty

Prepared by:

Palmer Biological Services, LLC
817 East 15th Avenue
New Smyrna Beach, Florida 32169

February 17, 2024

Scope of Work

The subject property is located on the west side of US Highway 17 in Orange City, Florida. Our environmental site work was performed in preparation for sale or continued development of the site. Our wetland delineation and gopher tortoise burrow surveys were conducted as per requirements set forth in the “Delineation of the Landward Extent of Wetlands and Surface Waters” (FDEP 1994) and the Florida Wildlife Commission “Gopher Tortoise Guidelines” (2023).

Wetlands

On February 14, 2024, Palmer Biological staff ecologists visited the subject property and performed a wetland delineation. The presence or absence of wetlands was determined using available wetland and upland vegetation ID, soil analysis and hydrologic indicators. A wetland boundary was delineated in the field (**Wetland Delineation Aerial Sketch**).

Vegetation – obligate, facultative wetland, upland, and facultative species were identified on the subject property. Vegetative species on the site include live oak (*Quercus virginiana*), magnolia (*Magnolia virginiana*), red maple (*Acer rubrum*), camphor (*Cinnamomum camphora*), cherry laurel (*Prunus virginiana*), primrose willow (*Ludwigia spp.*), golden rain tree (*Koelreuteria elegans*), Carolina willow (*Salix caroliniana*) and cabbage palm (*Sabal palmetto*).

Soils – The Web Soil Survey indicates that soil type 48 (Placid fine sand - frequently ponded), soil type 1 (Apopka fine sand, 0 to 5% slopes) and soil type 4 (Astatula fine sands, 0 to 8% slopes) can be identified on the subject property.

Hydrologic indicators – morphological plant adaptations, buttressing, rafted debris and hydrologic data were used as indicators during our site work.

Listed Species

A 100% pedestrian transect gopher tortoise (*Gopherus polyphemus*) burrow survey was conducted on the subject property. Potentially occupied gopher tortoise burrows were not found during site work (**Gopher Tortoise Burrow Survey**). Several listed wading birds most likely use the wetland area for nesting and foraging. A sandhill crane (*Grus canadensis*) was observed in the retention pond on the site (**Site Photos**).

Conclusions and Recommendations

Prior to our site work, research of available maps and other resources was performed in anticipation of site conditions. Background research and aerial photography on google earth indicated that the site data we gathered closely matches the available data gathered during research of the property. Upon site inspection, soil, vegetative and hydrologic indicators were observed, and thirteen (13) wetland flags were placed in the field along the wetland boundary. The wetland boundary on this site occurs along the lakefront portion of

the property as the elevation falls towards the water. The wetland boundary was determined using soil, vegetative and hydrologic indicators as detailed above. An existing retention pond is found just east of the wetland boundary on this site.

The subject property was also searched for the presence of gopher tortoise burrows and raptor nests. Potentially occupied gopher tortoise burrows were not found in the study area (**GT Survey Map**). Raptor nests were not observed on or adjacent to the property. The gopher tortoise burrow survey is valid for 90 days as per FWC Gopher Tortoise Guidelines.

We recommend having our wetland flags located by a registered land surveyor and placed to scale on a boundary survey of the property. The boundary survey map with the wetland boundary included can be used to plan development on the site. All wetland delineations are subject to regulatory review. Please check with local authorities concerning any setbacks or buffers prior to any construction, clearing, or filling. Please contact our office for questions or for additional information concerning the data presented in this report.

References

1. Florida Wetland Plants: An Identification Manual (DEP January 1998)
2. Volusia County Property Appraiser mapping system (2024).
3. FAC 62-340 “Delineation of the Landward Extent of Wetlands and Surface Waters” (FDEP 1994).
4. Munsell Soil Color Charts.
5. ISB: Atlas of Florida Vascular Plants (On-line Service 2009).
6. Google Earth on-line mapping services (2022).
7. University of Florida Forest Stewardship, “Common Trees in Florida Hardwood Forests” (2009).
8. Wetland Delineation Methodology (Florida DEP 1997).
9. National Wetland Inventory “Wetlands Mapper” (2024).
10. University of Florida Historical Aerial Photo Archive (2022).
11. Florida Fish and Wildlife Conservation Commission Permitting Guidelines (2023).

Wetland Delineation Aerial Sketch

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Palmer Biological Services, LLC February 14, 2024

Wetland boundary flags in the field are numbered as shown. Adjacent vegetation is also flagged to aid in location of markers. Flag locations and property boundaries are approximate



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Gopher Tortoise Burrow Survey

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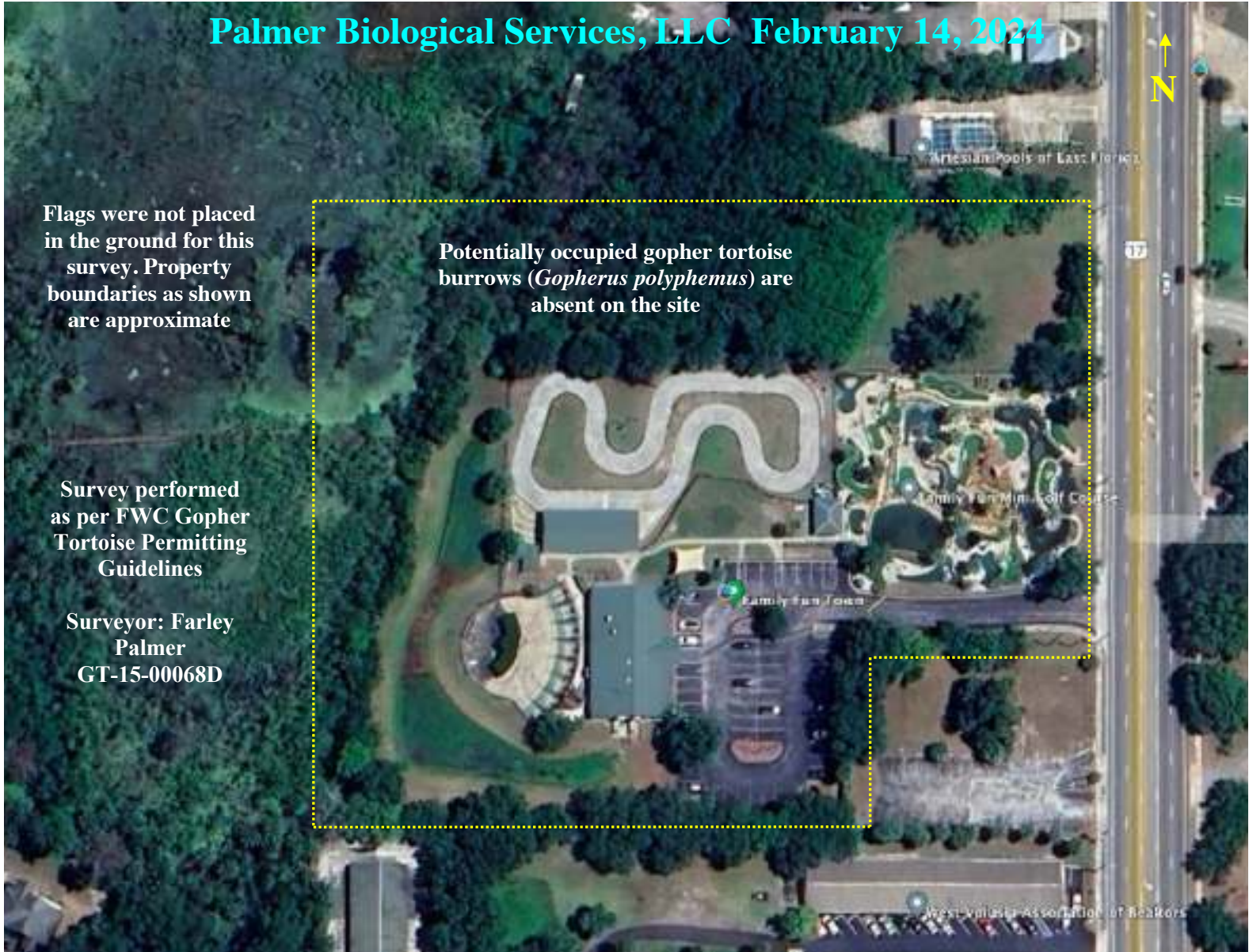
Palmer Biological Services, LLC February 14, 2024

Flags were not placed in the ground for this survey. Property boundaries as shown are approximate

Survey performed as per FWC Gopher Tortoise Permitting Guidelines

Surveyor: Farley Palmer
GT-15-00068D

Potentially occupied gopher tortoise burrows (*Gopherus polyphemus*) are absent on the site



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Site Photos



Fig 1. – view of wetlands west of the subject property



Fig 2. – view of retention pond from south property boundary