



BIOLOGICAL ASSESSMENT

**Pensacola Fish Hatchery Site
NRDA ERP Project
City of Pensacola, FL**

Prepared for:

**Florida Department of Environmental Protection
Office of General Counsel
Room 628 MS 35
3900 Commonwealth Blvd
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Prepared By:

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1829 Bainbridge Avenue
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Date:

August 19, 2013

1.0 Introduction

The following report describes our findings associated with the completion of a biological survey for the proposed Pensacola Fish Hatchery Site, a Natural Resource Damage Assessment (NRDA) Early Restoration Plan (ERP) project located within the City of Pensacola, Florida (Site Location Map - Appendix A). The proposed Fish Hatchery site is located on the upland portion of the site on approximately 10 acres of land. The site, known as Bruce Beach, is located on W. Main Street across from the former Emerald Coast Utilities Authority wastewater treatment plant site.

2.0 General Description of Subject Property

The site is located at the southeast corner of Main Street and Clubbs Street in Pensacola, Florida. The site is bordered to the north by Main Street, to the west by Clubbs Street. Bruce Beach mitigation area is located to the south and the City of Pensacola Southern Bulkhead Mitigation Area to the east. A bulk petroleum storage facility is located immediately west of the subject site (Transmontaigne Product Services., FDEP Facility ID No. 178508201).

Historical records suggest the property is man-made land, created in the early 1900's by filling in a portion of Pensacola Bay. Documented industrial activities have been ongoing on this property since 1910 (Figure 1).



Figure 1. Circa 1951 aerial of the subject property.

There are three areas immediately adjacent and within the subject property that have been developed as wetland mitigation areas (Figure 2 & plan view drawing attached in Appendix B).



Figure 2. Ca. 2012 Oblique view of the subject property and areas immediately surrounding.

Records indicate the Bruce Beach marsh was planted in 1991 by the Florida Department of Environmental Protection's Ecosystem Restoration Section. This mitigation area was formed by the construction of an L-shaped breakwater and infill of submerged lands of Pensacola Bay. Originally, smooth cordgrass (*Spartina alterniflora*) was established on one-meter centers throughout the entire created area. Hydrology within the site was established through tidal ebb and flow whose influences are manifested by a gap in the constructed breakwater which effectively connected the mitigation site to Pensacola Bay.

The southern bulkhead mitigation site is a mitigation area that was designed to compensate for wetland losses incurred with the construction of the southern bulkhead along the waterfront of what is now the Community Maritime Park. This mitigation site was once a channelized canal formerly used to discharge treated effluent from a now decommissioned wastewater treatment plant. The mitigation site is comprised of a meandering tidal channel and low/high marsh areas planted with smooth cordgrass (*Spartina alterniflora*) and marsh hay (*Spartina patens*) (Figure 3).

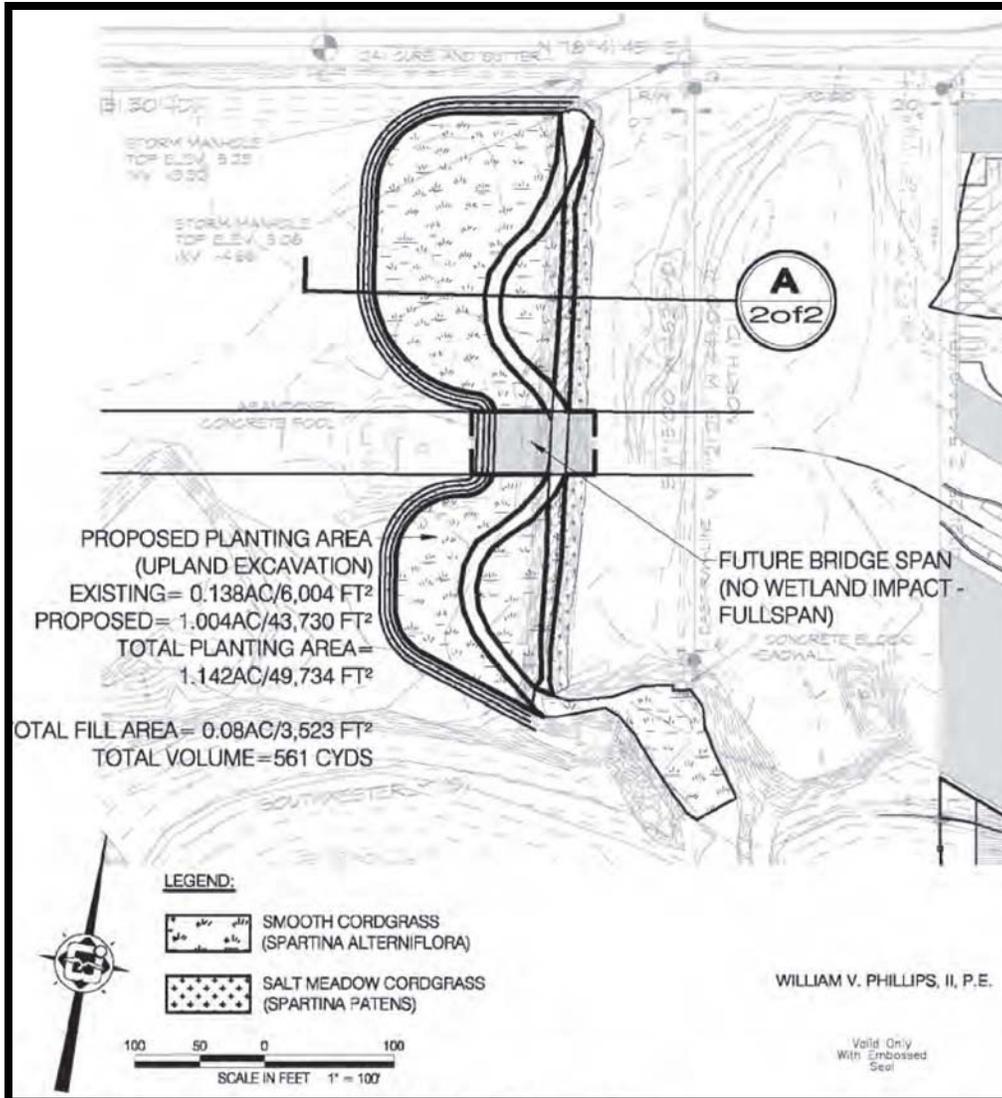


Figure 3. Plan view of southern bulkhead mitigation site.

The Community Maritime Park (CMP) wetland mitigation area was established in 2012 to compensate for loss of wetland functions that were eliminated by the construction of the Pensacola Community Maritime Park. The wetland mitigation plan included the creation of a salt marsh consisting of 0.86 acres of oyster reef habitat/breakwaters, 1.96 acres of planted salt marsh, and 1.72 acres of tidal creeks and pools which serve as a waterward extension of the existing Bruce Beach mitigation area. The mitigation plan also included modifications to the existing Bruce Beach Mitigation Area. These modifications included the re-grading of adjacent uplands to intertidal elevations for additional marsh creation and opening the southern end of the site to enhance tidal exchange between Bruce Beach and the CMP mitigation areas. This mitigation site is protected via a conservation easement recorded in OR Book 6417 Pages 1666-1680 in the official records of Escambia County (Figure 4).

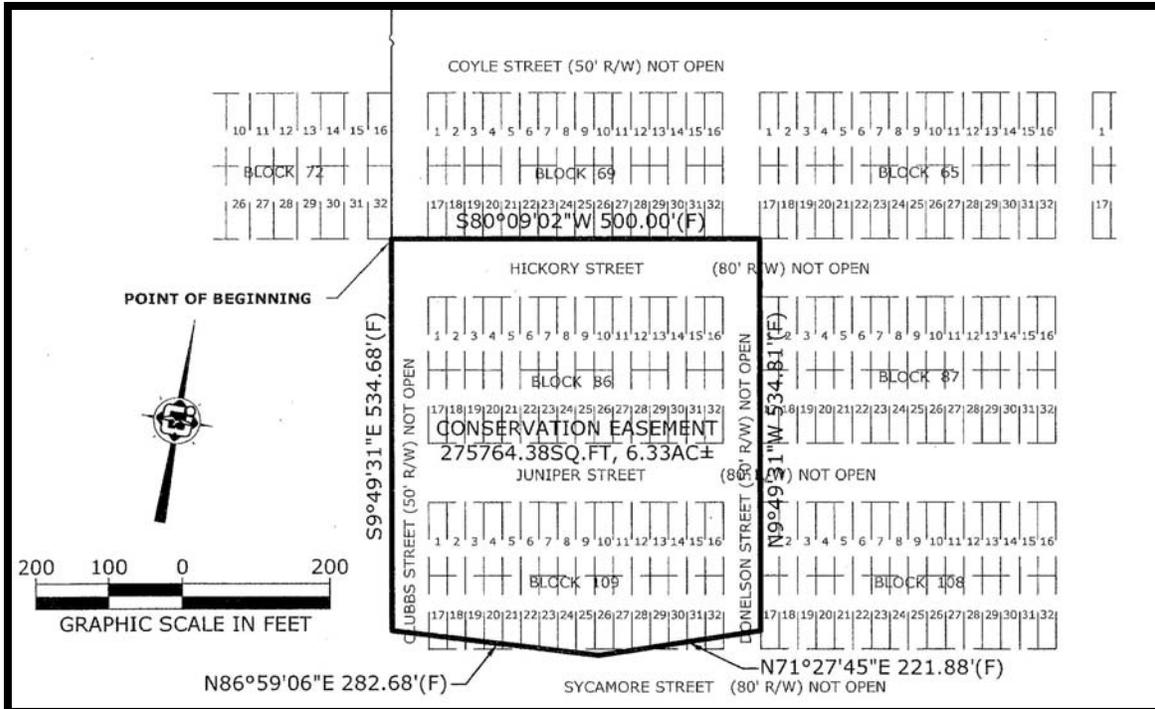


Figure 4. Plan view of conservation easement area associated with the CMP wetland mitigation site.

The subject property is highly disturbed and does not contain any intact ecological communities except for the areas developed as wetland mitigation. The ecological characteristics of the property are described in the following sections.

3.0 Natural Vegetative Communities

Wetland Sciences, Inc. attempted to characterize individual ecological communities found within the subject property using the inventory descriptions found the *FNAI Guide to Natural Communities of Florida*.

The subject property is highly disturbed. Excess material including earth fill and limestone rip rap are stockpiled within the subject property. Additionally, the site is strewn with other historic debris from previous industrial land uses including creosote treated timbers, concrete pilings, concrete culverts, bricks, abandoned rail spur, etc. These surface features noted during our site inspection are depicted on the plan view drawing attached in Appendix C. Please note additional material not evident during our site inspection may be present within the subject property.

With the exception of the existing wetland mitigation sites, there are only three areas located in the uplands that maintain any resemblance of an intact plant community. These areas are depicted on the plan view drawing attached in Appendix D.

For discussion purposes these three areas were identified as Polygon 1, 2, & 3. Polygon #1 is located in the northwest corner of the subject property and consisted of 0.66 acre. The canopy is largely dominated by live oak (*Quercus virginiana*) with approximately 30-35% coverage and cabbage palm (*Sabal palmetto*) at 15%. Section 12-6-1 of the City of Pensacola Land Development Code does afford protection to live oaks greater than 6-inches in diameter measured at breast height (dbh). Most of the live oaks within this polygon will be protected. Additionally, some of the live oaks may be considered heritage trees defined (>34-inches dbh) in Section 12-6-2(D) of the same code. There are two pecan trees (*Carya illinoensis*) located near the northeastern boundary of the polygon just north of a small unimproved road. Like the live oak these trees are afforded protection under the City's Land Development Code. The subcanopy was dominated by laurel oak (*Quercus laurifolia*) at 10% and live oak (*Quercus virginiana*) at 5%. Shrub species consisted of cherry laurel (*Prunus caroliniana*), tung oil tree (*Aleurites fordii*), Chinese tallow (*Triadica sebifera*), and common lantana (*Lantana camara*). Each shrub species comprised less than 1% of total cover. The herbaceous stratum was generally lacking given the dense coverage of the canopy and subcanopy but when present consisted of pinebarren goldenrod (*Solidago fistulosa*), American pokeweed (*Phytolacca Americana*), and trumpet vine (*Campsis radicans*).

Polygon #2 is located just landward and northwest of the existing Bruce Beach marsh. This polygon consists of a small cluster of live oak (*Quercus virginiana*) with total coverage at 30%. Again the live oaks found within this polygon may be afforded protection via City of Pensacola Land Development Code. Chinaberry (*Melia azedarach*) and live oak comprise the subcanopy. Coverage by both species is less than 10%. Shrub canopy was comprised of yaupon holly (*Ilex vomitoria*), cabbage palm (*Sabal palmetto*), wax myrtle (*Myrica cerifera*), and red cedar (*Juniperus virginiana*). Each shrub canopy species represented less than 2% total coverage.

Polygon #3 is located within a narrow spit of land in between the Bruce Beach marsh and the western property line. This polygon consists of 0.05 acre. This polygon is lacking a canopy. The subcanopy is dominated by laurel oak (*Quercus laurifolia*) at 20% coverage. The subcanopy is also comprised of china berry (*Melia azedarach*) at 15%, cherry laurel (*Prunus caroliniana*) at 10%, and cabbage palm (*Sabal palmetto*) at 5%. Herbaceous plants were lacking due to dense coverage of subcanopy species.

Finally, the site does contain a small fringing marsh along the waterfront of the subject property that is located just south of the southern bulkhead mitigation site and east of Bruce Beach Marsh. This fringing marsh is largely comprised of a monoculture of marsh hay (*Spartina patens*) which forms a narrow band of vegetation just landward of the mean high water line. This feature is depicted on the plan view drawing contained in Appendix C & D.

The remaining portions of the subject property are comprised of ruderal plant communities the result of historic disturbances and land use.

4.0 Wetlands

The subject property was subject to a wetland survey by scientists with Wetland Sciences, Inc. The wetland survey was conducted using methodology outlined in Chapter 62-340, Florida Administrative Code and in the Florida Wetlands Delineation Manual (State – DEP & Water

Management District) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Federal – Corps).

Aside from those wetlands created as mitigation, Wetland Sciences, Inc. did identify a small fringing marsh located along the shoreline near the southeast property corner. The wetland boundary was identified in the field by progressively locating points along the upland/wetland boundary at 25-50-ft. intervals or corresponding with directional changes with the boundary. Wetland Sciences, Inc. used a Trimble GeoXT GPS system to locate each point. Data was collected using Trimble's TerraSync Professional Software with further data refinement using Trimble's Pathfinder Professional Software. This fringing marsh is largely comprised of a monoculture of marsh hay (*Spartina patens*) which forms a narrow band of vegetation just landward of the mean high water line. This feature is depicted on the plan view drawing contained in Appendix C & D. This wetland will be subject to the regulatory jurisdiction of the US Army Corps of Engineers (Corps) under 33 CFR 320-330 and the Florida Department of Environmental Protection (DEP) under Chapter 62-340 F.A.C.

5.0 Invasive Plant Species

To identify exotic & nuisance plant species, Wetland Sciences, Inc. consulted the Florida Exotic Pest Plant Council's 2011 Invasive Plant Species List (FLEPPC 2011). This list is compiled by the FLEPPC List Committee and is refined and revised every two years.

The three polygons (1,2 & 3) previously identified in this report all contained invasive plant species. Polygon #1 contained Chinese tallow (*Triadica sebifera*), and common lantana (*Lantana camara*) both Category I exotic species. Additionally this polygon contained a few individual tung oil trees (*Aleurites fordii*) a Category II exotic species. Each exotic species comprised less than 1% of total cover.

Polygon #2 contained up to 10% coverage Chinaberry (*Melia azedarach*) at Category II exotic species. Also, polygon #3 contained up to 15% coverage of Chinaberry.

There are three other polygons within the subject property that contain a myriad of invasive & ruderal plant species. For discussion purposes, I have identified the polygons as #4, 5, & 6. These polygons are depicted in the plan view drawing attached in Appendix E.

Polygon #4 is located in the north central portion of the property and comprised of 0.50 acres. This polygon is largely dominated by Chinaberry at 35% coverage. Chinaberry is listed as Category II exotic species. This polygon also contains 3-4% coverage by small Chinese tallow saplings. Chinese tallow is a Category I exotic species. This polygon also contains 5-10% coverage by live oak and 5% coverage by cabbage palm.

Polygon #5 is located immediately south of #4 and comprised of 0.44 acre. This polygon is very similar in composition to #4 with China berry at 30% coverage and Chinese tallow at 3%. Additionally this polygon contains 10% coverage by live oak and 5% coverage by cabbage palm.

Polygon #6 is located near the southeastern shoreline of the subject property in between the southern bulkhead mitigation site and Bruce Beach marsh. It is approximately 0.55 acres in size. The canopy within this polygon is largely lacking with only a few cabbage palms at 5% coverage. Subcanopy is largely dominated by Chinaberry (Category II exotic specie) at 25% and cherry laurel tree at 2%. Herbaceous stratum is largely dominated by wetland nightshade (*Solanum tampicense*) at 30-40% coverage. Lantana (*Lantana camara*) is also found in the groundcover at 1% coverage. Both lantana and wetland nightshade are listed as Category I exotic species. The herbaceous stratum was also comprised of tall morning glory (*Ipomea purpurea*) at 15% with the following species all less than 5% total coverage each: cowpea (*Vigna unguiculata*), hemp sesbania (*Sesbania herbacea*), florida beggarweed (*Desmodium tortuosum*), painted poinsettia (*Euphorbia cyanthophora*), various species of ragweed (*Ambrosia* spp.), and trumpet vine (*Campsis radicans*).

Finally, there are monoculture stands of torpedo grass (*Panicum repens*) located at various points along the shoreline. These stands are depicted in the plan view drawing attached in Appendix F. Torpedo grass is listed as a Category I exotic species.

The remaining portions of the property not identified by any polygon were subject to recent disturbances from the construction of the Community Maritime Park. These areas are largely dominated by hemp sesbania (*Sesbania herbacea*). There may be isolated specimens of Chinese tallow, lantana, and wetland nightshade located throughout the recently disturbed areas. These species would be <1% total cover.

6.0 Listed Species

This portion of the assessment focused on the presence of any rare, threatened, or endangered species and/or their critical habitats within the subject parcel. The current study undertook reviews of federal and state laws. Results of these reviews were used to develop a comprehensive list of threatened and endangered species, or species of special concern, that may occur on the project site.

Through evaluation of the classified land uses and vegetation types, as well as those citing habitat preferences for rare, threatened and species of special concern, specific areas were identified that could possibly support listed species. Field verification of land use, associated vegetation types and the comprehensive field evaluation was conducted over a two-day period in August 2013. This study was based on a Land Use, Cover and Forms Classification System (FLUCFCS) and focused on habitats that could potentially support state or federally listed species or species of special concern. The survey was performed within all habitats encountered and had the sole aim of determining habitat status of such flora or fauna by concentrating on signs suggesting their presence and activities. Surveys were based on visual and audible detection methodologies as outlined within the FGFWFC manual entitled, *Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval, 1988*.

The pedestrian surveys were accomplished during morning hours in an effort to observe, hear, and record evidence of faunal activity within the survey boundaries. Specific identification methodologies utilized during the surveys are described within the following paragraphs.

No state or federally listed animal species and/or designated habitat were confirmed as residing within the subject property. There are no designated critical habitats located within the property. There are no bird rookeries located within the subject property. There are no osprey or bald eagle nests located on the property or on adjacent properties.

The waters of Pensacola Bay lying adjacent to the subject property are designated as critical habitat of Gulf Sturgeon. Gulf Sturgeon (*Acipenser oxyrinchus desotoi*) is a federally listed species (threatened) and a state species of special concern. Gulf sturgeon critical habitat is composed of 14 geographic areas, or units. The units collectively encompass almost 2,800 river kilometers and over 6,000 square kilometers of estuarine and marine habitat. The subject property is adjacent to Unit 9, the Pensacola Bay Critical Habitat Unit (Figure 5).

Unit 9 includes Big Lagoon, Bayou Grande, Macky Bay, Bass Hole Cove, Saultsmar Cove, Catfish Basin, Pensacola Bay, Escambia Bay, Blackwater Bay, and East Bay. The Federal Register, 2003 defines the western boundary of Unit 9 as the Florida State Highway 292 Bridge crossing Big Lagoon to Perdido Key. The southern boundary is the 72 COLREGS line between Perdido Key and Santa Rosa Island [(defined at 33 CFR 80.810 (g)]. The eastern boundary is the Florida State Highway 399 Bridge at Gulf Breeze, Florida. The lateral extent of Unit 9 is the mean high water (MHW) line on each shoreline of the included waterbodies (Federal Register, 2003).

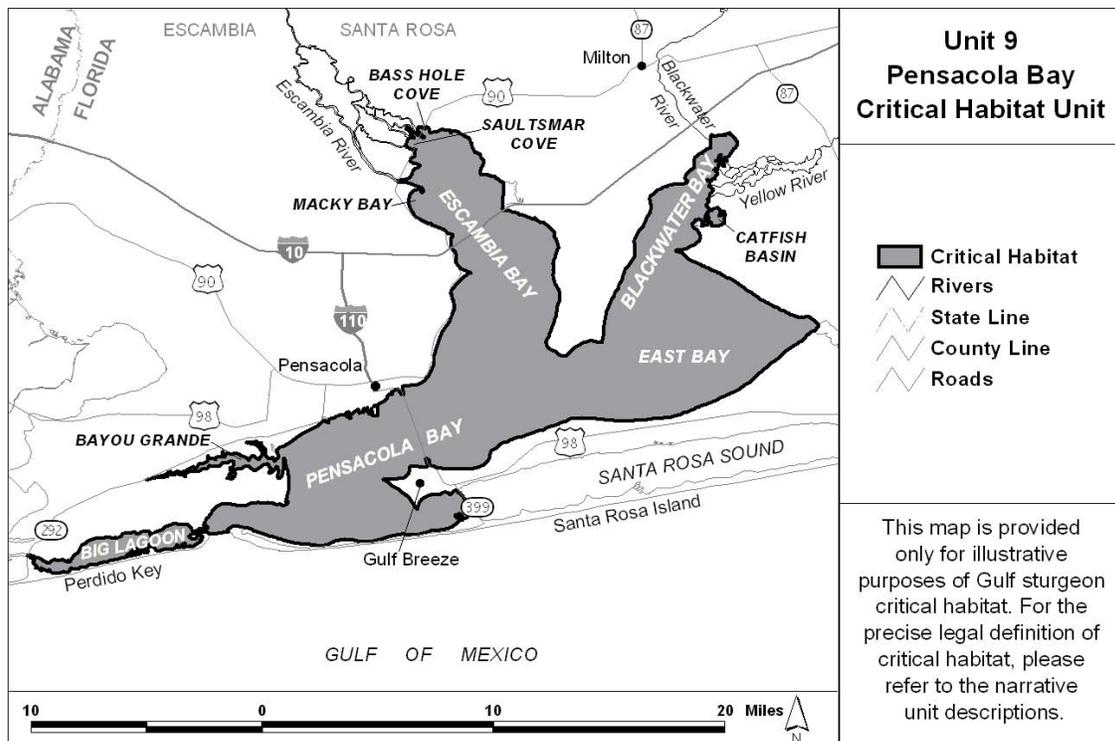


Figure 5. Unit 9, Pensacola Bay Critical Habitat Unit for Gulf Sturgeon.

7.0 Conclusions

The subject property is highly disturbed with documented industrial uses dating back to the early 1900s. Past land uses have significantly impacted existing plant communities.

Some of the relic plant communities identified by Wetland Sciences, Inc. do contain tree species that will be afforded protection by City of Pensacola's Land Development Code. I would recommend the site be subject to a tree survey to identify and locate these protected trees.

The site contains several Category I & II exotic plants which have been identified and located by Wetland Sciences, Inc. Coverage estimates and locations are provided as attachments to this report.

The site is adjacent to several wetland mitigation sites. Activities within areas utilized as mitigation will be limited and subject to conditions of permits issued by both the Department of the Army Corps of Engineers (Corps) and Florida Department of Environmental Protection (DEP). Additionally, the CMP mitigation area is protected via a recorded conservation easement.

No state or federally listed animal species and or designated habitats were confirmed as residing or existing within the subject property. The site is adjacent to areas defined by the federal government as critical habitat for the Gulf Sturgeon.

No bird rookeries, osprey nest, or bald eagle nests were located within or adjacent to the subject property.

Faunal use of the subject property is extremely limited given the extent of human disturbance at the site. Faunal use will be limited to those species adapt to highly urbanized setting.

Aside from the existing wetland mitigation areas identified by Wetland Sciences, Inc., the site does contain a small fringing marsh under the regulatory purview of the DEP and Corps.

This concludes our findings. Be advised, the information presented within this report represents the professional opinion of the scientist that performed the work and is intended to furnish the client with an approximation of the status of biological resources on the site under consideration.

Questions regarding the contents or conclusions of this report can be directed to Keith Johnson of Wetland Sciences, Inc at either the address or telephone number listed on the title page.

8.0 List of Preparers

We declare that, to the best of our professional knowledge and belief, we have the specific qualifications based on education, training, and experience to complete a biological assessment of the subject property.



Keith D. Johnson

Wetland Sciences, Inc.
B.S. Environmental Science
Years of Experience: 18

9.0 REFERENCES

- Allen, M. 1988. Wildlife Survey Methodology Guidelines - for Section 18.D of the Application for Development Approval. FG&FWFC, Tallahassee, FL.
- Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
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- Florida Natural Areas Inventory (FNAI). 2010. Guide to the natural communities of Florida: 2010 edition. Florida Natural Areas Inventory, Tallahassee, FL
- Federal Register, 2003. 68 Federal Register 13369-13418; Department of the Interior, Fish and Wildlife Service, 50 CFR (Code of Federal Regulations) Part 17; Department of Commerce, National Oceanic and Atmospheric Administration, 50 CFR Part 226. *Endangered and Threatened Wildlife and Plants, Designation of Critical Habitat for the Gulf Sturgeon, Final Rule*. March 19, 2003.
- United States Department of Agriculture, Soil Conservation Service. 1985a. 26 Ecological Communities of Florida.
- United States Department of Agriculture, Soil Conservation Service. 1993. National soil survey handbook, title 430-VI. (Available in the State Office of the Natural Resources Conservation Service at Gainesville, Florida.)

APPENDIX A

Site Location Map



ENVIRONMENTAL CONSULTANTS

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 TEL: 850.453.4700
 KEITH@WETLANDSCIENCES.COM

PROJECT NAME: FISH HATCHERY	
APPENDIX A – SITE LOCATION MAP	
PROJECT NO.: 2013–233	
BY: KDJ	DATE: 08/19/13
SHEET: 1 OF 1	



APPENDIX B

Existing Mitigation Areas

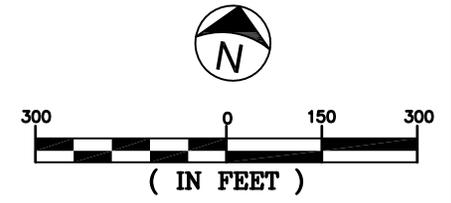


NOTE: THIS IS NOT A SURVEY. SINCE A SURVEY WAS NOT PROVIDED CERTAIN ASSUMPTIONS WERE MADE IN THE FIELD REGARDING THE LOCATION OF PROPERTY CORNERS. THE PROPERTY BOUNDARY SHOWN ON THIS SKETCH WAS OBTAINED FROM THE ESCAMBIA COUNTY PROPERTY APPRAISER AND CITY OF PENSACOLA. THIS SKETCH SHOULD BE CONSIDERED APPROXIMATE UNLESS VERIFIED BY A SURVEY OR OTHER MEANS.



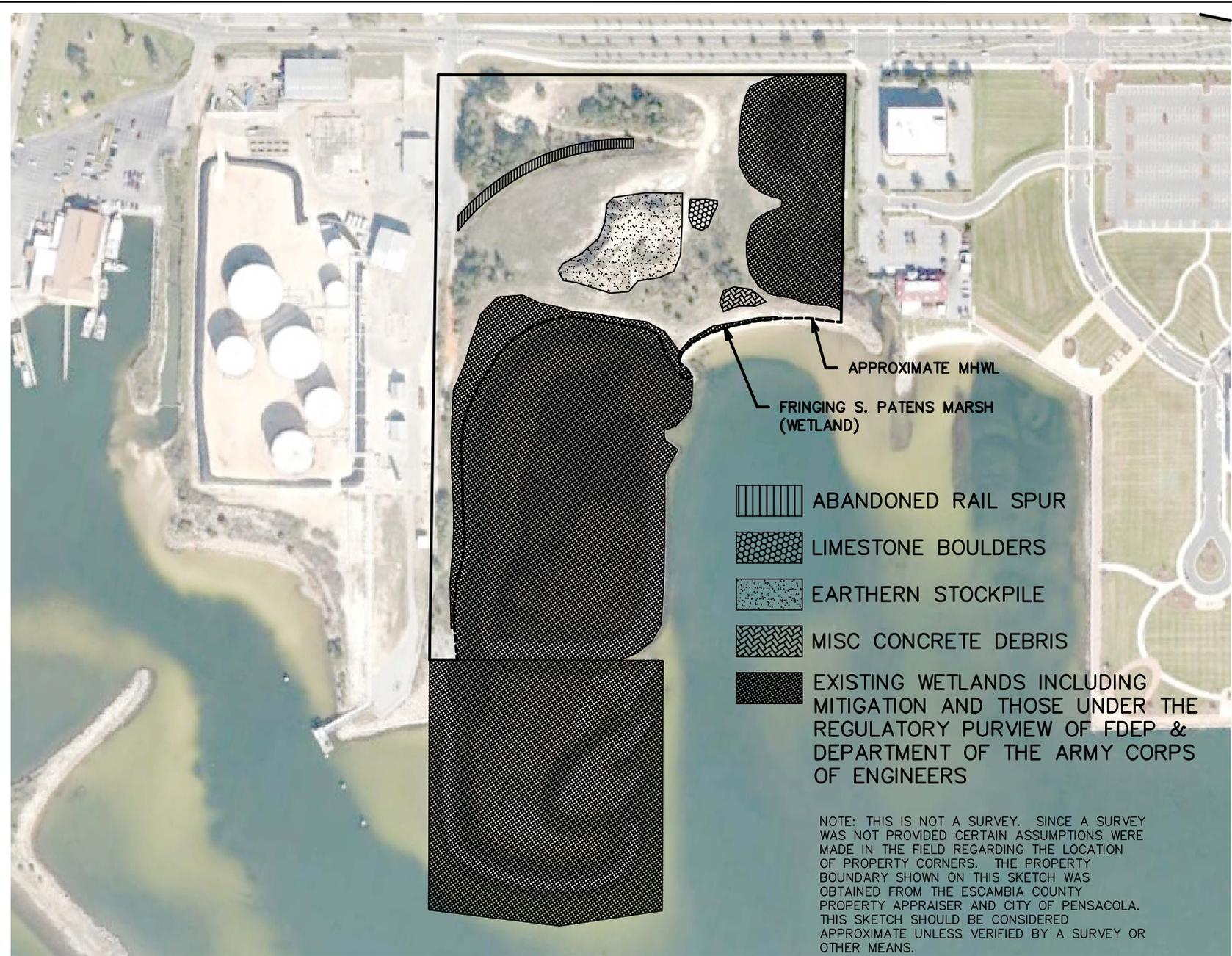
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PROJECT NAME: FISH HATCHERY	
APPENDIX B – EXISTING MITIGATION AREAS	
PROJECT NO.: 2013–233	
BY: KDJ	DATE: 08/19/13
SHEET: 1 OF 1	



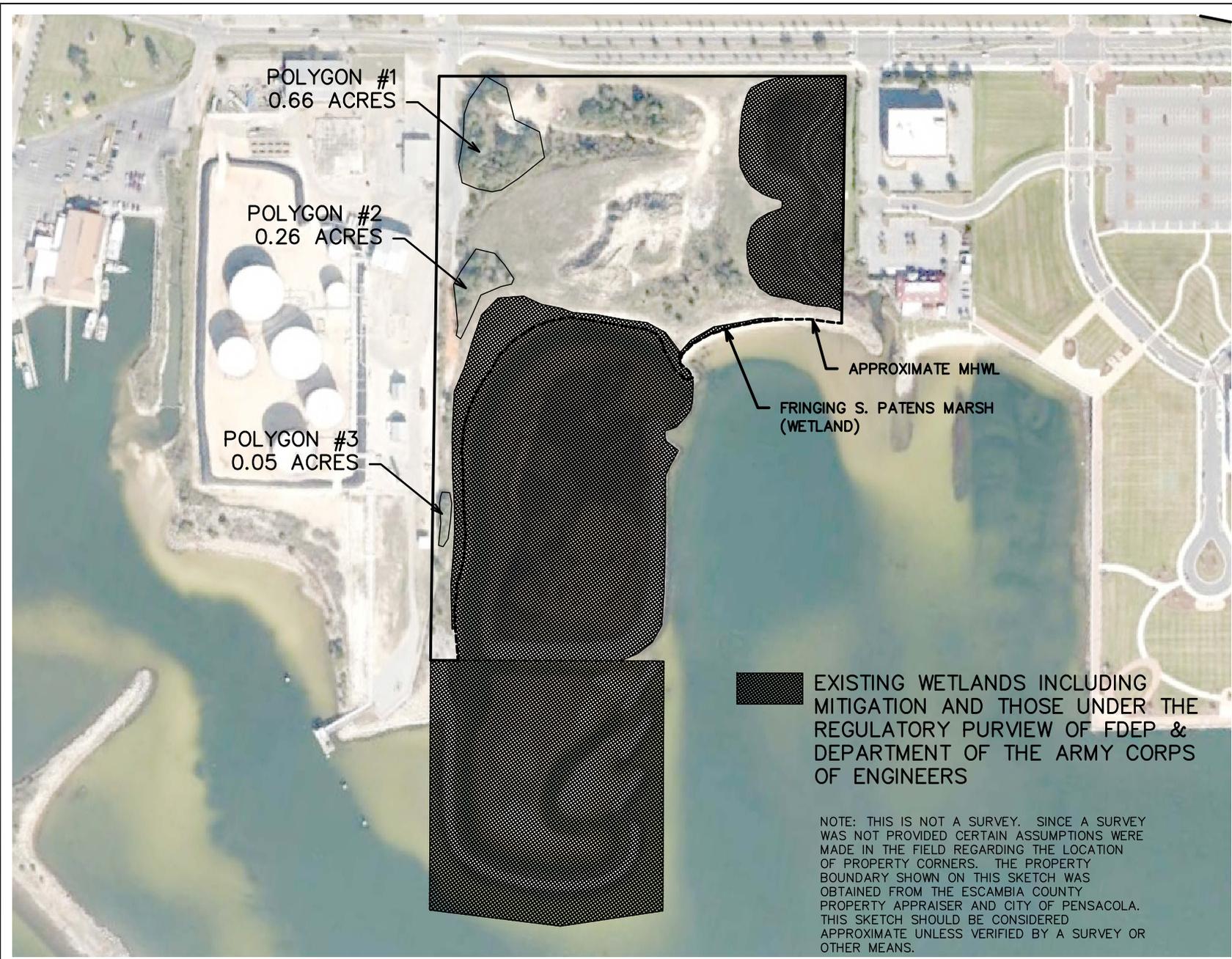
APPENDIX C

Remnant Construction Debris & Historic Features Noted



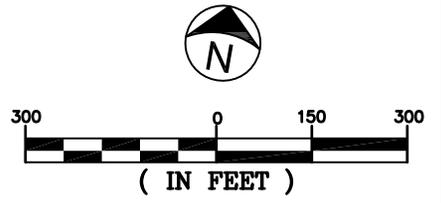
APPENDIX D

Natural Plant Communities



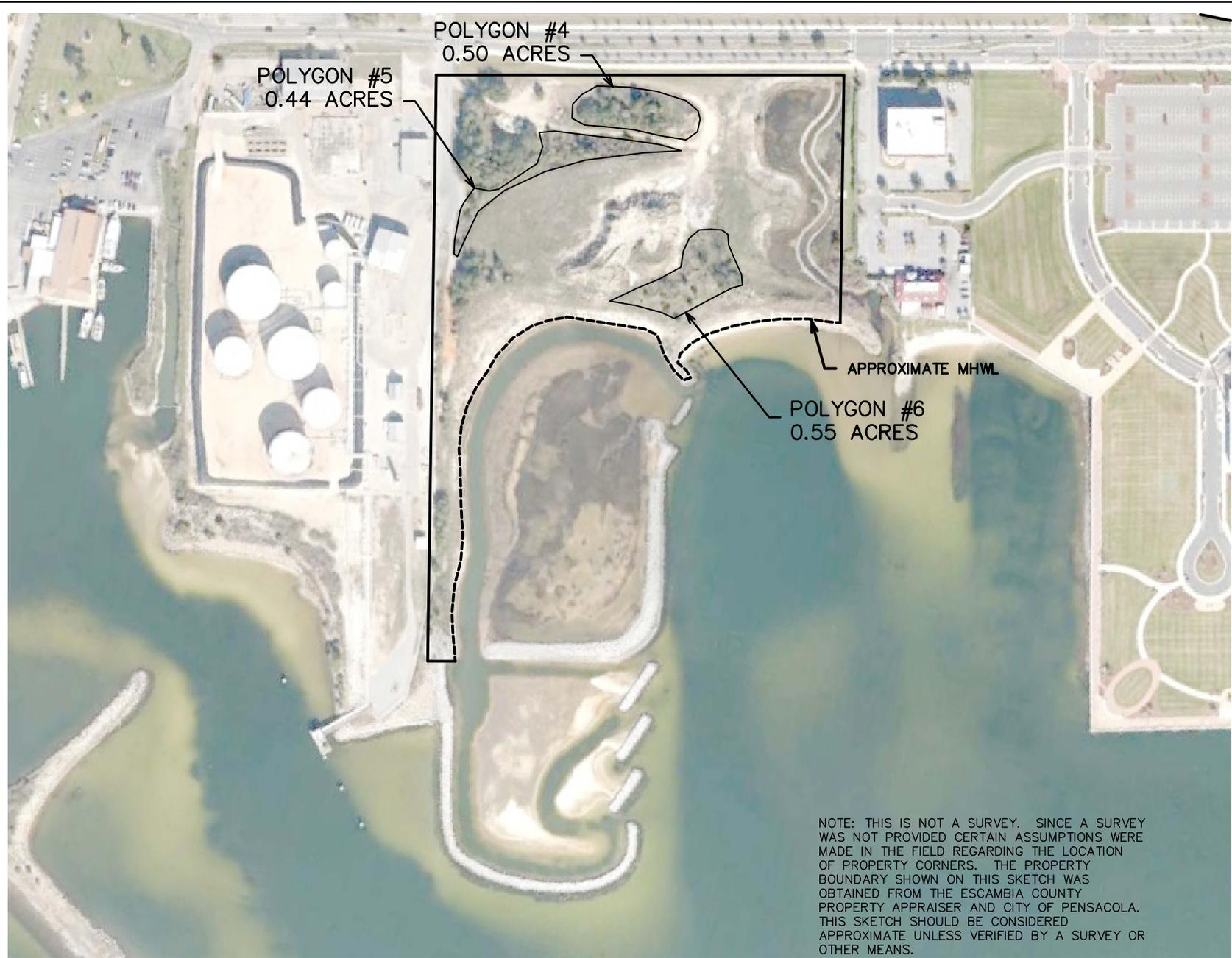
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APPENDIX D	
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APPENDIX E

Ruderal & Invasive Plant Communities

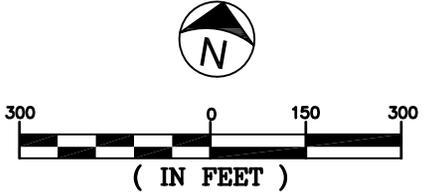


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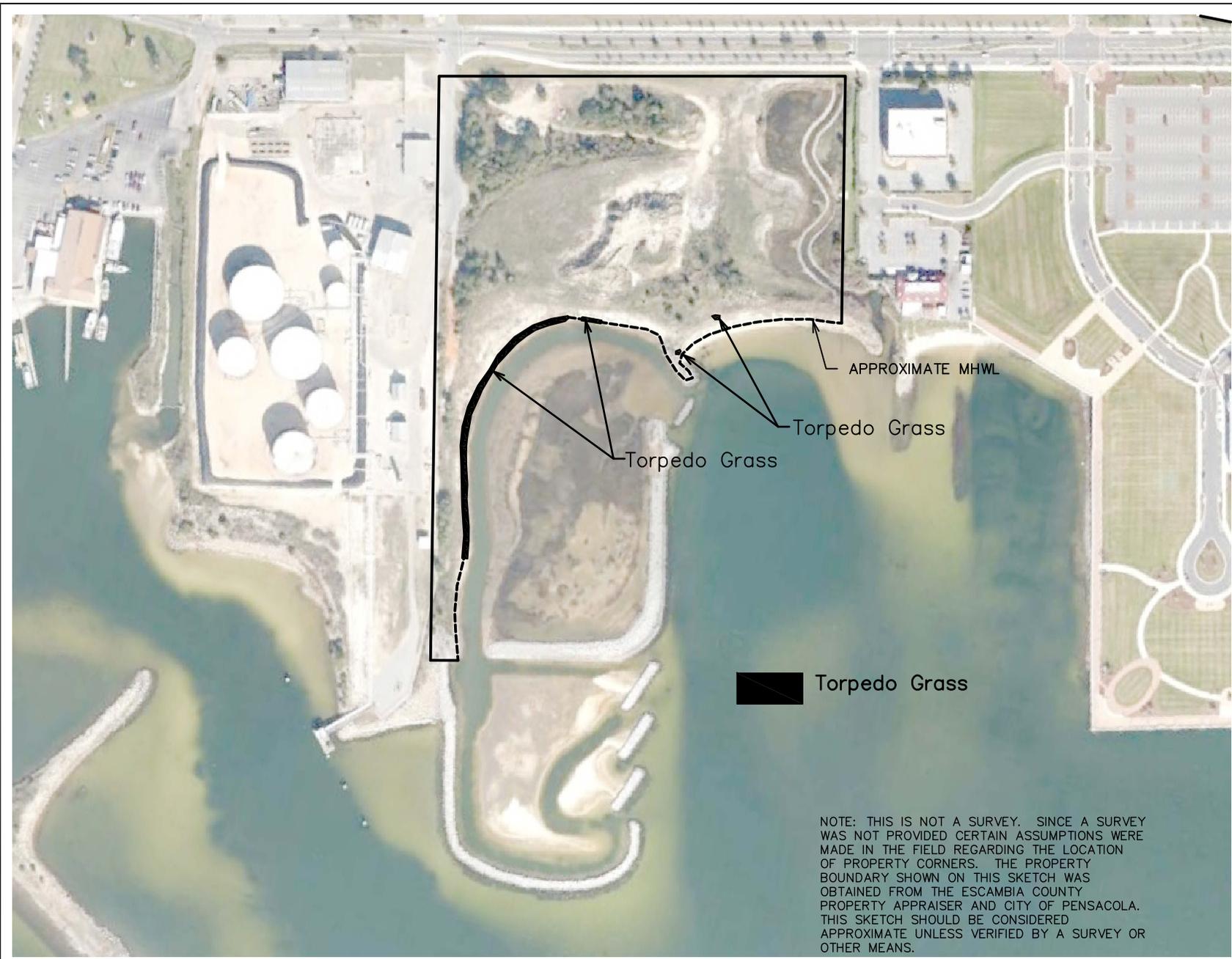
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APPENDIX F

Torpedo Grass Locations



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