

Existing Conditions Report

of

**Cow Key Parcels, Monroe County, Florida
Property Address – 7000/7200 5th Street, Stock Island
RE: 00123900-000000 (B) & 00123910-000000 (C)
Sec 02-Twn 68-Rge 25**

for

**Owen Trepanier & Associates, Inc.
1026 Thomas Street
Key West, FL 33045-2155**

**Field Assessment – November 2019
Report Filed - May 13, 2020**

ECR Conducted by: Harry A. DeLashmutt, Biosurveys, Inc.
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Vegetative Habitat Assessment / Delineation

The field assessment of the existing vegetative conditions of the Cow Key was conducted by the undersigned on November 6, 2019. The Parcel is an offshore island connected to Stock Island by a fill-based causeway and gravel access road. The subject island is predominantly inundated low elevation land with mangroves and wetlands. The Atlantic shoreline side or south side of the Key has stretches of a natural sand beach berm running parallel to the shoreline and located behind a mature mangrove fringe in shallow tidal water. The beach berm rises in elevation quickly and then drops off into transitional wetlands and submerged low land dominated with homogeneous mangrove forests. The beach berm which is created by wave deposited sand supports clusters of upland tropical woody plant species growing on the highest elevations. The berm site has tropical hardwood vegetation that can be classified as “low hammock” 426 habitat. Scrub mangrove habitat can be found in patches where the limestone bedrock is present near the ground surface in the expansive mangrove forests. Man-made gravel fill roads or trails provide vehicular access to the beach berm – mainly in the eastern half of the Parcel C. Agricultural use is occurring on the land (Bee hives for honey production) and minor outside storage. No other significant development is present. Scattered invasive exotic vegetation is present on higher elevations on the land and road shoulders but not in heavy concentrations. A single dense thicket or patch of the invasive exotic Latherleaf and mature Australian Pine trees are located on the Beach Berm.

Monroe County - Land Use Status:

The two Cow Key Parcels fall under the jurisdiction of Monroe County, Growth Management Division, and any significant development of the Key would require application of the Rate of Growth procedures. The land is environmentally designated as “Tier 1” under the Tier System for allocation of development permitting. The “Tier 1” designation with planning density rules require certain **upland habitat** for future development of the Key. The Flood Zone covering the southern shoreline of the Key ranges from VE11 to AE 9. Current use is “Agricultural” with temporary support structures and access gravel roads.

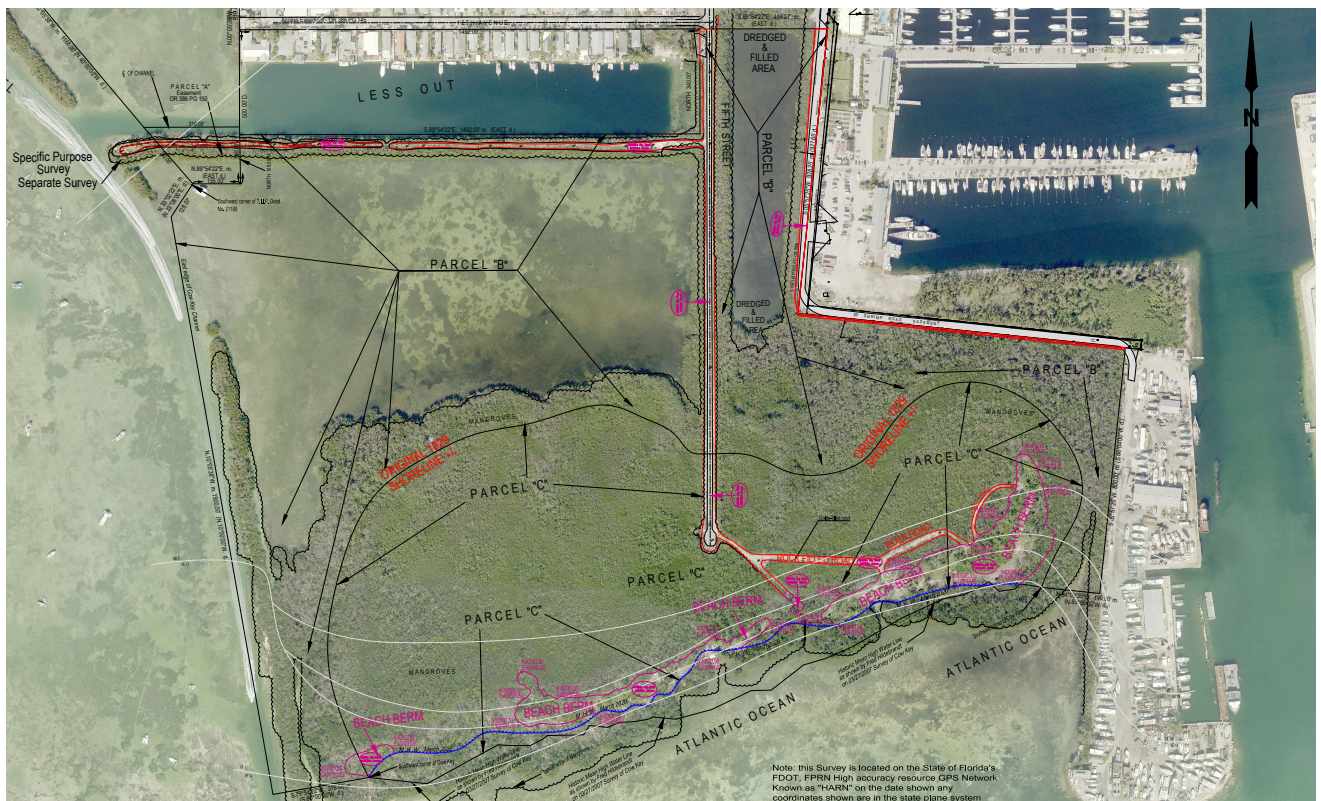
Methods:

The existing conditions assessment is to determine the scope and extent of high elevation or upland vegetative habitat currently existing on the Parcels and to delineate the various habitats. The results of the assessment will help determine the pathway for any development potential on the subject Key. The site assessment methodology is to delineate and mark various habitat found using identifying indicator plants, hydrologic conditions of the site, and soil/substrate characteristics. Ecotones were considered when identifying habitat delineation. This was accomplished by using the standardized State wetland protocols and reasonable scientific judgment to find a line or boundary within a transitional zone between wetland and upland vegetative habitat. A professional land surveying team accompanied the undersigned during wetland/upland identification and delineation markings using pin flags and flagging. The survey team followed the markings and identified them using GPS coordinates and transit mapping. The mapping would establish and document the habitat boundaries and area measurements. An inventory of tropical hardwoods, upland understory trees, transitional wetland and wetland plant species was conducted in the field. Photography was used to document the typical vegetation and plant cover of each habitat found on the site. In addition, a potential development site was identified – following Monroe County Land

Development Regulations dealing with “Clustering Requirements” (see Recommendations Section below)

The Key was inspected for vegetation listed as threatened, of special concern, protected, regionally important, commercially exploited, or for any endangered species. Rare and Listed plant species were inventoried and can be found in this Report. The Beach Berm upland habitat contains numerous native upland trees that fall into the 4” DBH “regulated tree” category. County & FWS Habitat maps were analyzed for any critical animal species habitat of known or probable occurrence. Any direct observations of wildlife are noted in this report.

The identification and field inventory of plants on this property referenced *Notes on Florida’s Endangered and Threatened Plants* by Florida Department of Agriculture; *Native Trees and Shrubs of the Florida Keys* by Paul Scurlock; *Trees of Everglades National Park and the Florida Keys* by George Stevenson; and *Identification & Biology of Non-Native Plants in Florida’s Natural Areas* by Langeland & Burks. Soils and substrate were assessed using *Soil Survey of Monroe County, Keys Area, Florida*, by the US Department of Agriculture. The extent of wetlands / uplands habitat delineation on this Key followed the protocol found in Section 373.421 Florida Statutes and codified in 62.340, Florida Administrative Code – *Delineation of the Landward Extent of Wetlands and Surface Waters*.



2020 Boundary Survey / Aerial Photo – of Parcels B & C Cow Key Showing Delineation of Beach Berm

Geographic Setting:

The delineated beach berm areas on the photo land survey of Parcels B & C - Cow Key (above) depicts the higher natural elevations on the Key or Parcel C. This natural berm area parallels the shoreline on the south of the Parcel with some areas exhibiting low hammock plant species. The coastal berm is oriented east and west and contains mostly Carbonate sand from calcareous algae aquatic plants. Some Oolitic Limestone sand is found on the waterward side of the berm. Wave action from storms has deposited the berm over time and with each storm event the berm builds to higher elevations and width. The current average elevation of this berm land area is approximately 4 feet above sea level. The total area within the boundaries of the Beach Berm on Cow Key measures 4.8316 acres. Several gravel & cobble filled single lane roads or trails have been constructed in the past for the berm access. These gravel roads connect to the end of 5th Street.



5th Street Gate to Parcel & Fill Pad Storage Area (Left).



View of 5th Street from Turn-around (South end)

Shrimp Road borders the east boundary line of the Parcel. The shoulder of the western side of the Road has fill that extends to the boundary line and increases the elevation high enough to affect the wetland vegetation found homogenously throughout the Parcel and westerly from Shrimp Road. Dense monoculture mangroves fill the wetlands on the eastern portion of the Key.

At the entrance to the overall Parcel is a gated fill supported drive or road that is the extension of 5th Street on Stock Island and it dead ends with a turn-around on Cow Key. Immediately to the side at this entrance Gate & road is a fill pad of approximately 2,300 sq. ft. that is currently used for open storage. The high elevation land of the fill pad supports native grasses and scattered invasive exotic (Brazilian Pepper) shrubs. Green Buttonwood along the edges or transition slopes of the pad drop into low wetlands with Red Mangroves found along the Parcel boundary line which is fenced. Inundated land influenced tidally is the type of habitat beyond this entrance pad and road inside the gate of the Parcel. The mostly open and inundated surface water area extends to a dredged canal that serves access to a residential sub-division. The dredged canal has a south shoreline of a spoil berm that connects to the 5th Street road and extends to the end of the historic dredging. This berm has high elevation land that supports upland plant species of mostly native shrubs, ground cover, and small size Buttonwoods, Black Torch, Blolly, Poisonwood, and Gumbo Limbo trees. The opposite side of the 5th Street access road also has a dredged area that appears to be the source-borrow pit for the road system fill within the subject Parcel. Buttonwood and Mangroves line the shoreline of the road between the dredge area and the 5th Street road fill. This borrow pit shorelines or edges follow the Parcel Boundary Line to the east of the Parcel entrance & road. All shorelines

are mangrove lined. A small spoil jetty exists on the north end of the east borrow pit but is low in elevation and wetland in nature. This area northerly area is Parcel B with the RE# 00123900-000000 with an address of 7000 5th Street, Stock Island. Parcels B & C make up the total area of the overall Cow Key Parcel.



Dredge Spoil Berm Crest – Western Half, Parcel B



Eastern Half Photo of Spoil Berm Crest

Beyond the spoil berm (jetty) to the west of 5th Street extended is open tidally influenced submerged land with shallow water and scattered small scrub mangroves. This large area extends to the higher elevation land that forms a natural delineation between Parcel B and of the Parcel C (see boundary survey) to the south. Parcel C has a separate Real Estate number and includes the majority of the less tidally inundated Cow Key area. This Parcel C is divided into two halves in this Report for the purposes of increasing the visual scale to examine and identify features and habitat described here. Mangroves dominate the areas in Parcel C with the exception of fill supported roads, access trails, and natural beach berm. The historic mean highwater line of the Atlantic Ocean forms the presumed boundary or extent of Cow Key - Parcel C – RE# 00123910-000000 & the address of 7200 5th Street.

Cow Key is mostly covered with tidal mangroves with a narrow ridge of higher elevation along the south shoreline. A coastal beach berm is centered on this ridge that runs parallel to an intertidal silt and organic mud beach area also covered by mature fringe mangroves.



Eastern Beach Berm w/ Hammock Tree Species -Bkgd.



Center Beach Berm – Black Mangrove at Berm Toe.

Plant Communities and Vegetative Analysis:

The two Parcels, B & C of the Key are dominated by Red, White, and Black Mangroves. Low hammock plant species and upland understory trees are found on a Coastal Berm that is relatively higher in elevation from the predominant land areas supporting wetland habitat. Berm crest vegetation in highest open areas of the berm have dense stands of Broom Sedge, Bluestem, *Sporobolis*, and *Distichlis* grasses. More denser areas of vegetation in the high land berm contain low hammock upland plant species in a dense tangle of trees, shrubs and vines to include Blolly, Saffron Plum, Buttonwood, Blackbead, Gumbo Limbo, Black Torch, Florida Thatch Palm, Darling Plum, Poisonwood, Seven-year Apple, Spanish Stopper, and Indigoberry. Invasive exotic Australian Pine, Brazilian Pepper, and Asiatic Colubrina or Latherleaf are scattered among this higher elevation berm habitat. Carbonate sand of the Berm does not meet the hydric soils test but is moist enough to support a mix of sedges, grasses, and Facultative Wetland indicator plants. Its also dry enough to support tropical hardwood tree and understory plant species.

As the berm lowers in elevation on the berm boundaries, saltmarsh plant species increase as transition to mangrove wetlands begin surrounding the beach berm. These transitional areas contain Sea Daisy, Sea Purslane, Yellowtop, Saltgrass, Bluestem, and Sea blite. The wetter areas near the toe of the berm have the more obligate ground cover wetland species – the dominant wetland plants Saltwort, Sea Purslane, and Beach Carpet.

Tidal Fringe Mangroves along the south side of the Beach Berm protect it from wave action and heavy storm damage. The mangroves tend to slow the rush of sand laden waves thus dropping the sand out of suspension - as the mechanism for berm buildup.



Typical Mangrove Fringe Waterward of Beach & Berm. Berm is to the right in photo.



Beach Berm Waterward Toe & Latherleaf- Bkgd. Dense Ground Cover of Flat Sedge & Blue Stem on Berm Crest.

As with any property or development in Florida, invasive exotic vegetation is a real problem for the owner. The State of Florida - Pest Plant Council has compiled a listing of the most threatening exotic plants on the natural environment or what they refer to as Class I invasive exotic pest plants. There are five (5) Class I pest plant species identified growing on these Parcels. Location of the pest plants is on the higher elevations of road shoulders, berms, spoil jetties, and fill pads.

Protected, Listed, and Regulated Plants:

The general inventory of hardwood species on the upland area of the Key revealed nine (9) listed species. The dense understory plant Blackbead is listed as “Threatened” and is one of the more

dominant listed plants found in open understory of the Beach Berm and spoil jetty. Joewood, Mayten, and Florida Thatch Palm are rare and found entirely on Beach Berm elevations. The three species of mangrove located on the Key are all protected by the State of Florida and require special permits for trimming or altering them. In accordance with County code, any native plant that measures four (4) inches or greater in diameter at breast height requires mitigation if impacted by any development. There are natural hardwood tree species that meet these criteria. There was no indication or evidence of the endangered Tree Cactus or other critical plant species found on the more upland areas.

Plant Codes for The Vegetative Species Lists Below are:

Protected (P); Threatened (T); Endangered (E); Regionally Important (RI); Invasive Exotic (IEX); Exotic (EX); Native plant codes are (N) followed by their status.

Cow Key – Re: 00123910-000000

Listed Species Found on the Parcel C – Cow Key

Common Name	Scientific Name	Status	Notes
Black Torch	<i>Erithalis fruticosa</i>	N - T	
Darling Plum	<i>Reynosa septentrionalis</i>	N - T	
Florida Thatch Palm	<i>Thrinax radiata</i>	N - E	
Joewood	<i>Jacquinia keyensis</i>	N - T	
Mayten	<i>Maytenus phyllanthoides</i>	N - RI	
Seven-year Apple	<i>Casasia clusiifolia</i>	N - RI	
Black Mangrove	<i>Avicennia germinans</i>	N - P	
Red Mangrove	<i>Rhizophora mangle</i>	N - P	
White Mangrove	<i>Laguncularia racemosa</i>	N - P	

Vegetation Inventory of the High Elevation Beach Berm:

Common Name	Scientific Name	Status
Beggars Tick	<i>Desmodium canum</i>	N
Buttonwood	<i>Conocarpus erectus</i>	N
Blackbead	<i>Pithecellobium guadalupense</i>	N - T
Bladdermallow	<i>Herissantia crispa</i>	N
Blolly	<i>Guapita longifolia</i>	N
Dune Lilly	<i>Hymenocallis laterifolia</i>	N
Fleabane	<i>Pulchea carolinensis</i>	N
Gray Nickerbean	<i>Caesalpinia bonduc</i>	N
Greenbriar Vine	<i>Smilax auriculata</i>	N
Gumbo Limbo	<i>Bursera simaruda</i>	N
Hammock Milkpea	<i>Galactia striata</i>	N
Jamaica Caper	<i>Capparis cynophallophora</i>	N
Jamaica Dogwood	<i>Piscidia piscipula</i>	N
Limber Caper	<i>Capparis flexuosa</i>	N
Morning Glory	<i>Ipomoea muscari</i>	N
Poisonwood	<i>Metopium toxiferum</i>	N
Saffron Plum	<i>Sideroxylon celastrina</i>	N

Scorpion tail	<i>Heliotropium angiospermum</i>	N
Sea Grape	<i>Cocoloba uvifera</i>	N
Seven-year Apple	<i>Casasia clusiifolia</i>	N - RI
Snowberry	<i>Chiococca spp.</i>	N
Spanish Needles	<i>Bidens alba</i>	N
Spanish Stopper	<i>Eugenia foetida</i>	N
Tickseed	<i>Coreopsis leavenworthii</i>	N
White Stopper	<i>Eugenia axillaries</i>	N
Wild Lantana	<i>Lantana involucrata</i>	N
Yellowtop	<i>Flaveria linearis</i>	N

Dominant Non-invasive Exotics –

Coconut Palm	<i>Cocos nucifera</i>	EX
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Plant Inventory of Lower Elevation Wetland Habitat:

Plant Codes for This Wetland Vegetative Species List are:

Protected (P); Invasive Exotic (IEX); Exotic (EX); Native plant codes are (N) followed by their status or value as a wetland indicator. FAC – Facultative; FACW – Facultative Wet; and OBL – Obligate. These three types of vegetation status form the basis of a unified statewide methodology for the delineation of wetlands to satisfy the mandate of Section 373.421 Florida Statutes and codified in 62.340, Florida Administrative Code – “Delineation of the Landward Extent of Wetlands and Surface Waters”.

Common Name	Scientific Name	Status
Beach Carpet	<i>Phloxerus vermicularis</i>	FACW
Black Mangrove	<i>Avicennia germinans</i>	P OBL
Flat Sedge	<i>Cyperus haspan</i>	FACW
Green Buttonwood	<i>Conocarpus erectus</i>	N - FACW
Hurricane Grass	<i>Fimbristylis spathacea</i>	FACW
Marsh Aster	<i>Aster sabulatus</i>	OBL
Mayten	<i>Maytenus Phyllanthoides</i>	FACW
Red Mangrove	<i>Rhizophora mangle</i>	P OBL
Saltmarsh Cordgrass	<i>Spartina patens</i>	FACW
Saltwort	<i>Batis maritima</i>	OBL
Samphire	<i>Blutaparon vermiculare</i>	OBL
Sea Daisy	<i>Borrichia frutescens</i>	OBL
Seashore Paspalum	<i>Paspalum vaginatum</i>	FAC
Sea Blite	<i>Suaeda linearis</i>	OBL
Sea Oxeye	<i>Borrichia arborescens</i>	OBL
Sea Purslane	<i>Sesuvium portulacastrum</i>	FACW
Seashore Saltgrass	<i>Distichlis spicata</i>	OBL
Seashore Rush Grass	<i>Sporobolus virginicus</i>	OBL
Small Fruited Beak Rush	<i>Rhynchospora microcarpa</i>	OBL
Spike Rush	<i>Fimbristylis cymosa</i>	OBL
Sword-grass	<i>Scirpus ameicanus</i>	FACW
White Mangrove	<i>Laguncularia racemosa</i>	P OBL

Invasive Exotic Plants:

Australian Pine	<i>Casuarina spp.</i>	IEX Class I
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Brazilian Pepper	<i>Schinus terebinthifolus</i>	IEX Class I
Beach Naupaka	<i>Scaevola taccada</i>	IEX Class I
Latherleaf	<i>Colubrina asiatica</i>	IEX Class I
Torpedo Grass	<i>Panicum repens</i>	IEX Class I

Wildlife Observed:

Ashy Gecko	<i>Sphaerodactylus elegans</i>
Belted Kingfisher	<i>Megaceryle alcyon</i>
Crab Spider	<i>Gasteracantha cancriformis</i>
Fiery Skipper (Butterfly)	<i>Hylephila phyleus</i>
Great White Heron	<i>Ardea occidentalis</i>
Great Blue Heron	<i>Ardea herodias</i>
Terrestrial Crab	<i>Cardisoma guanhumi</i>
White Speckled Hermit Crab	<i>Paguristes puncticeps</i>
Yellow Warbler	<i>Dendroica petechial</i>

Invasive Exotic Plants:

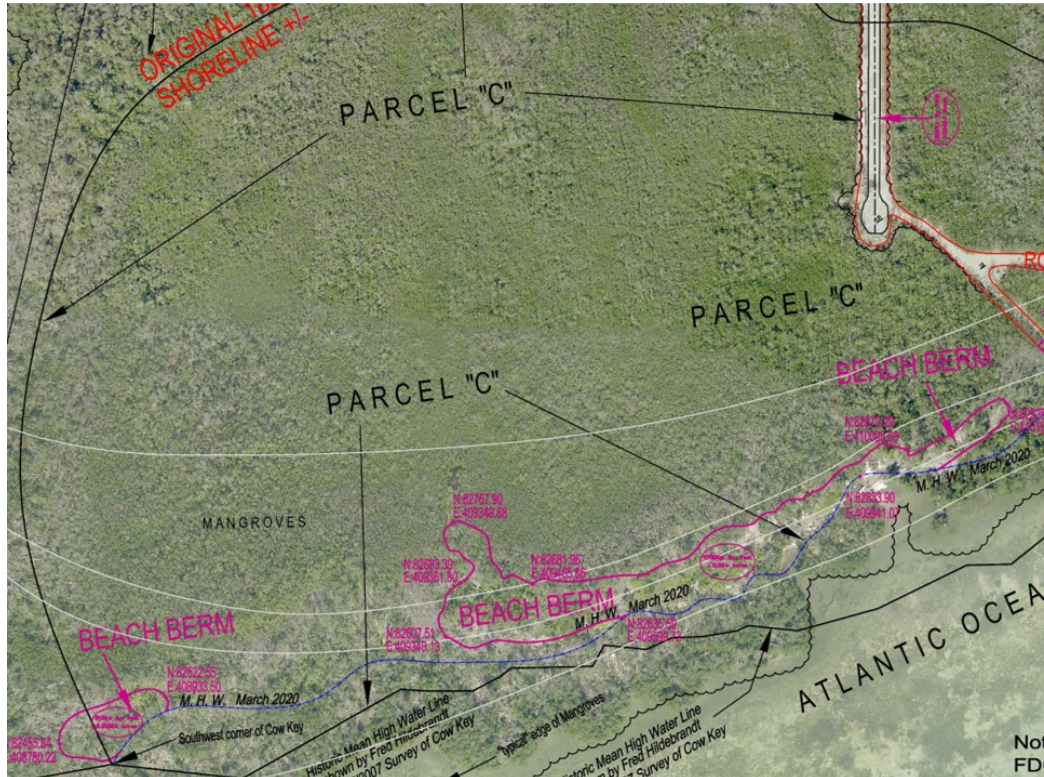
Plants listed as Class I invasive exotics must be eradicated from the property as a condition of development in accordance with Monroe County Code. There are five (5) Class I invasive species identified growing on the higher elevation areas. No notable exotics are found in the wetlands of the Parcels. Of the invasive exotic plants found on the Key, Latherleaf covers the most area of the beach berm and is currently the most threatening to native habitat plant species. It is a prolific seed dissemination plant. Brazilian Pepper is found lining road shoulders and the turn-around dead end of 5th Street. Shrimp Road boundary fill areas have the Pepper issue as well along fill shoulders.

Protected Animal Species Map Review:

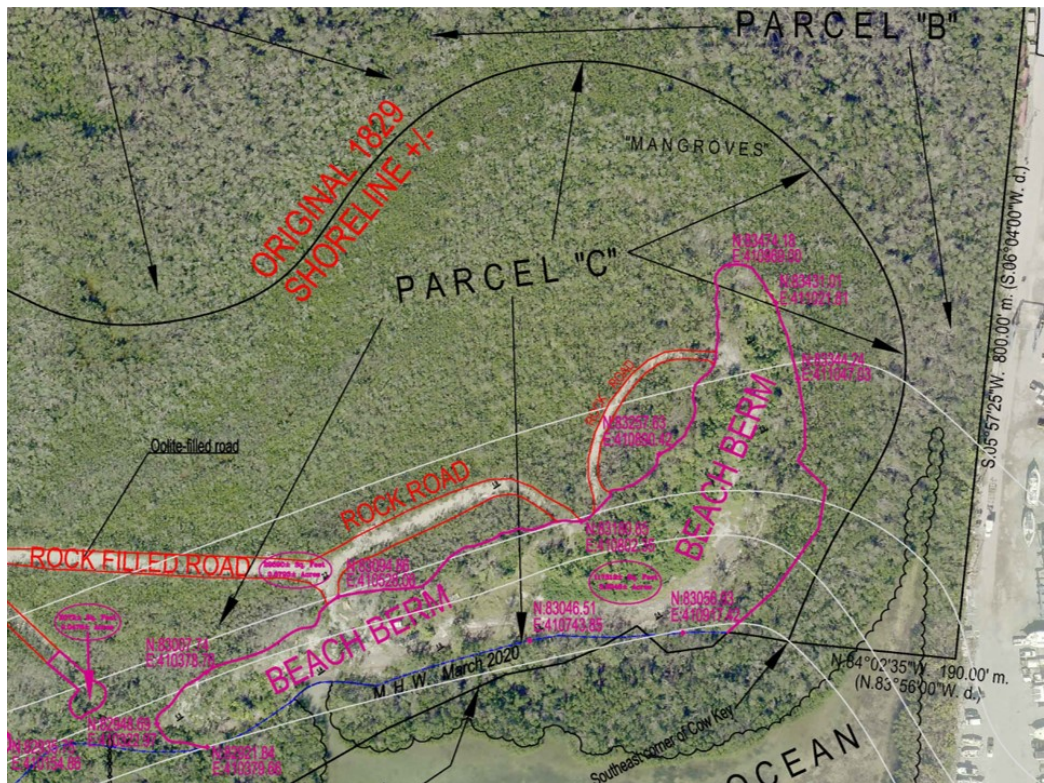
The Monroe County Growth Management Division and US Fish & Wildlife update mapping show potential habitat on the Parcel for the White Crown Pigeon, the Stock Island Tree Snail, and the Eastern Indigo Snake. This mapping continues to be reliant on ground truthing by biologists in the field for accuracy. The only possibility for potential critical habitat on the Parcels would be that of the White Crown Pigeon due to the extent of mature mangroves that are ideal for nesting. A detailed examination & survey of mangrove habitat on both Parcels found no evidence of current or past WC Pigeon nesting and no other critical habitat (for imperiled wildlife).



Native Vines and Grasses Dominate the Beach Berm Crest. Invasive Exotic Australian Pine – East Berm Area.



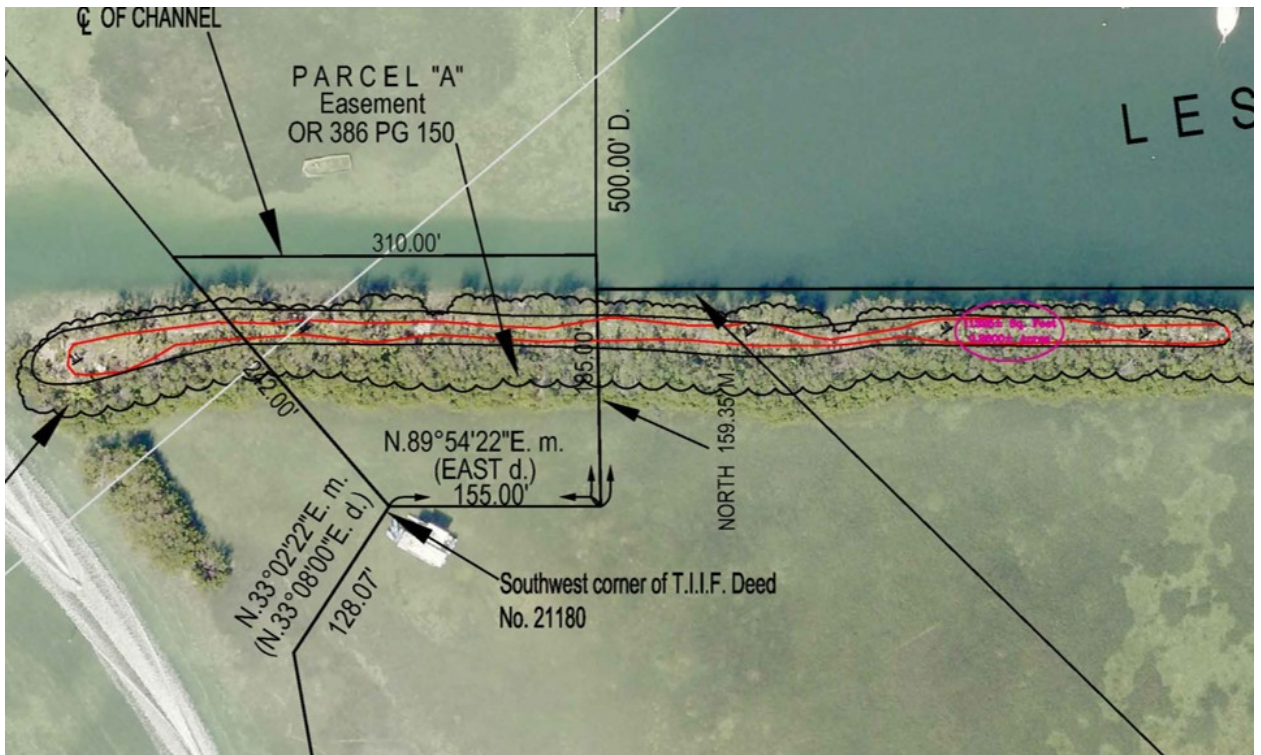
Western Side of Cow Key – Beach Berm Habitat Delineation – (Total Area upland 1.527 acres)



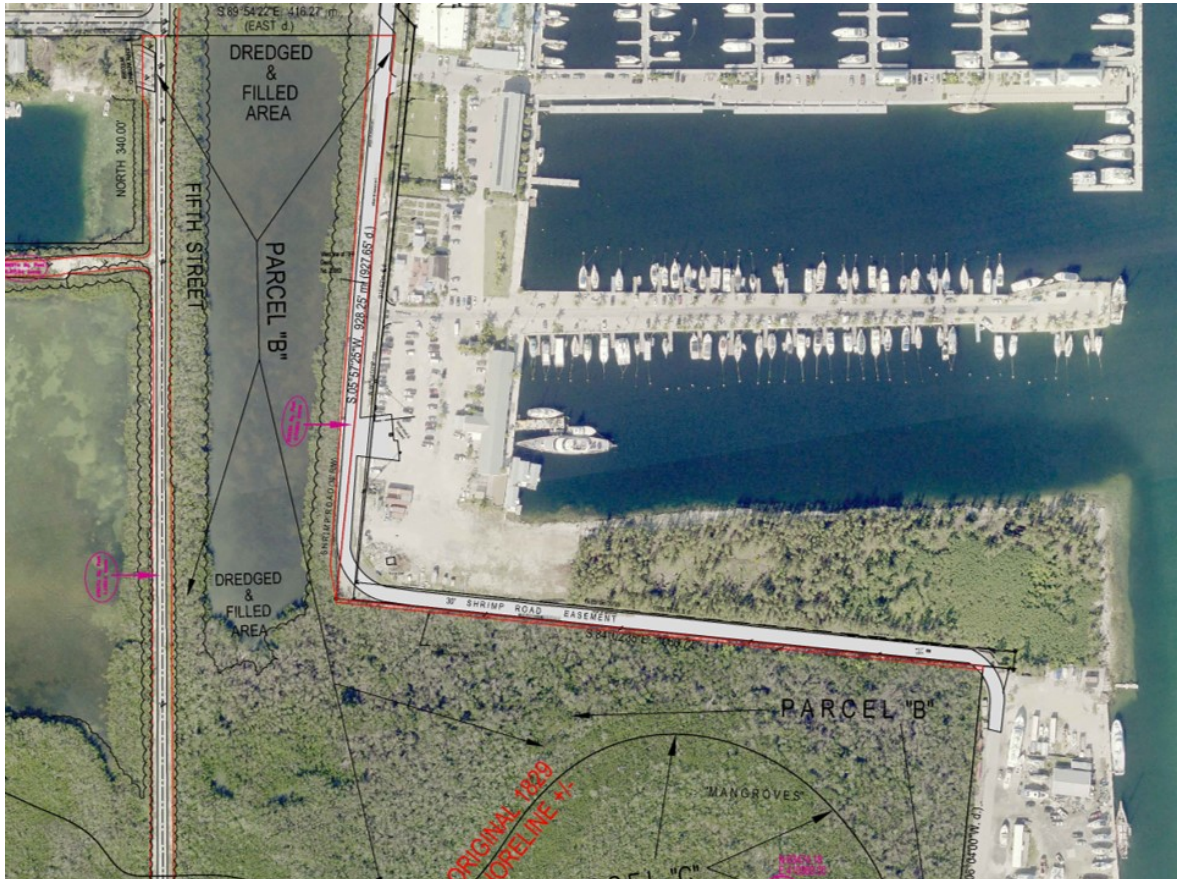
Eastern Half of Cow Key – Beach Berm Habitat – (Total area 3.3046 acres)
Existing Interior Gravel Road System – (Total area upland .7269 acre)



Canal Dredge Spoil Berm or Jetty Parcel B - East Half - (Total Area upland .6712 acre)



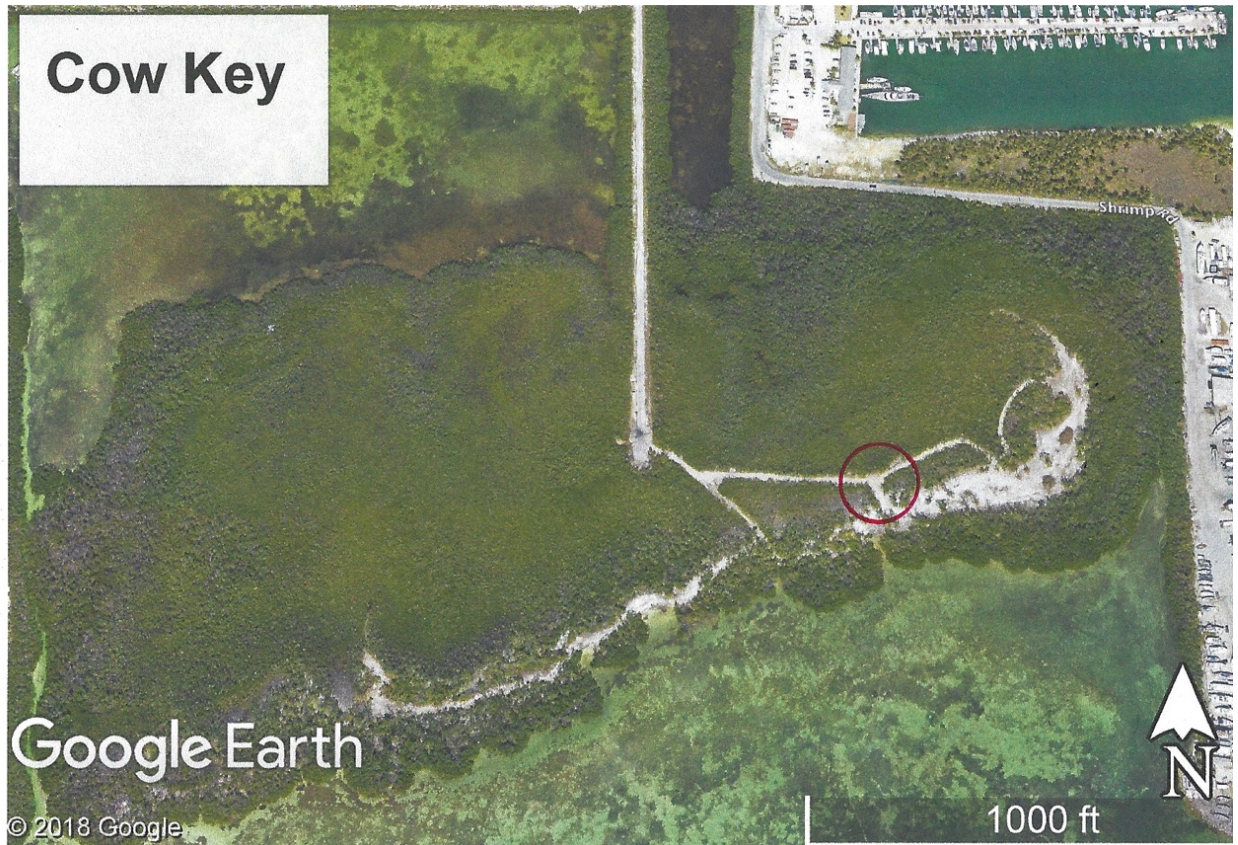
Western Half of Spoil Jetty Surrounded by Surface Water – (Total area upland .2600 acre)



East Side of Parcels Adjoining Shrimp Road – Upland Strip on Boundary (Total area .7165 acre)
 5th Street Road & Fill Pad at Gate (Left in photo) – (Total upland area 1.3945 acres)

Potential Development Site Recommendation

The optimum location for any development on the Key was considered during the habitat assessment. Considering the Land Development Regulation - Clustering concept of the County, the optimal site would be the second road junction area immediately north of the Beach Berm – See below aerial photo with site marked in red. This location is in the AE 10 FEMA Flood Zone – well away from the VE Flood Zone of the Key and away from the more sensitive Beach Berm habitat. This triangular shaped upland area measures approximately 3,850 sf in size. With the required setbacks for any development from the surrounding wetlands, the previously filled area is very suitable for the placement of a dwelling unit or an agricultural facility structure. In addition, if minor additional space is necessary in this location, there is an adjacent patch of Red Mangroves that received heavy complete mortality without recovery to date, from Hurricane Irma in 2017. Future additional fill could possibly move into this disturbed area for development with appropriate permitting. The proposed site would be easily accessed by the existing roads and centrally located for any agricultural use expansion activity. Site development would not impact sensitive vegetative habitat.



Potential Least Sensitive Development Site Recommended – Using Clustering LDR. (Red Circled Area)

Contacts:

Please contact Harry DeLashmutt at (305) 942-9221, Biosurveys, Inc. for any further analysis, recommendations or questions concerning this site condition Report. Contact the County biologist (305) 289-2500 for specific requirements or development permits necessary for any action dealing with the removal or disturbance of vegetative habitat on these Parcels.

Assessment and ECR conducted by Harry DeLashmutt

Harry DeLashmutt
 Consulting Biologist May 13, 2020

Attachments: Monroe Co. GIS Habitat Overlay, Tier System Designation – GIS Overlay Copy, and Google Earth Aerial of Parcel - 2017



Monroe County Habitat Overlay Copy – GIS
(This ECR is substantially in agreement with the MC GIS Habitat Map Overlay)



Monroe County Tier System Overlay Copy - GIS

