

Aquatic Habitat Survey and Assessment

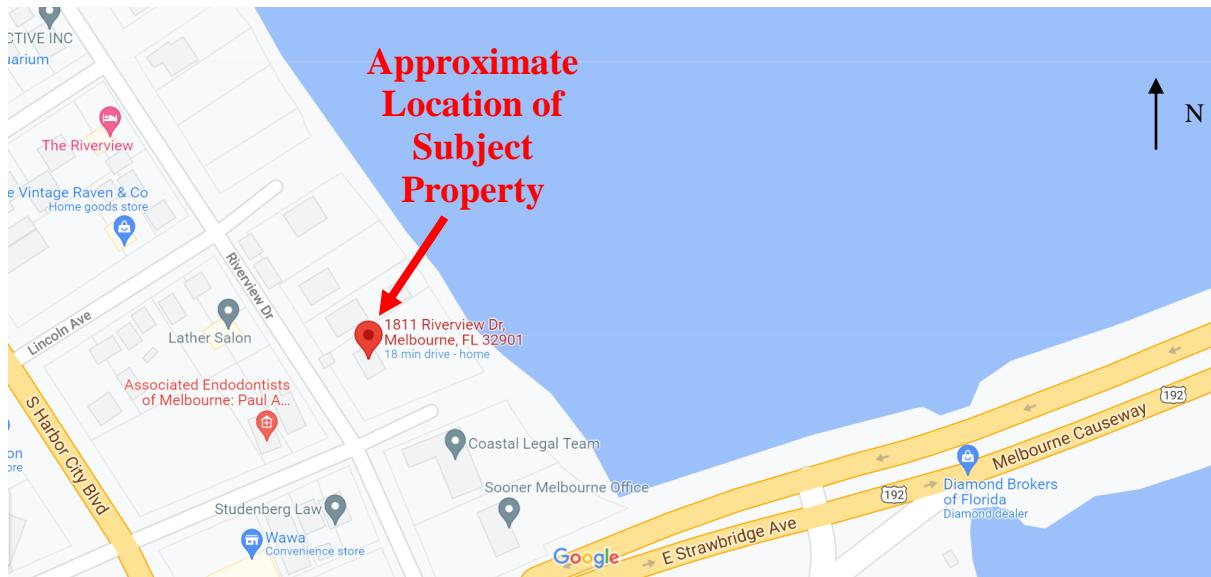
Parcel ID: 28-37-02-FC-10-5

FEBRUARY 5, 2022

OBJECTIVE OF WORK: Survey approximately 60,000 square feet of the Indian River Lagoon for the presence and location of any significant natural resources as well as evaluating the feasibility of a dock.

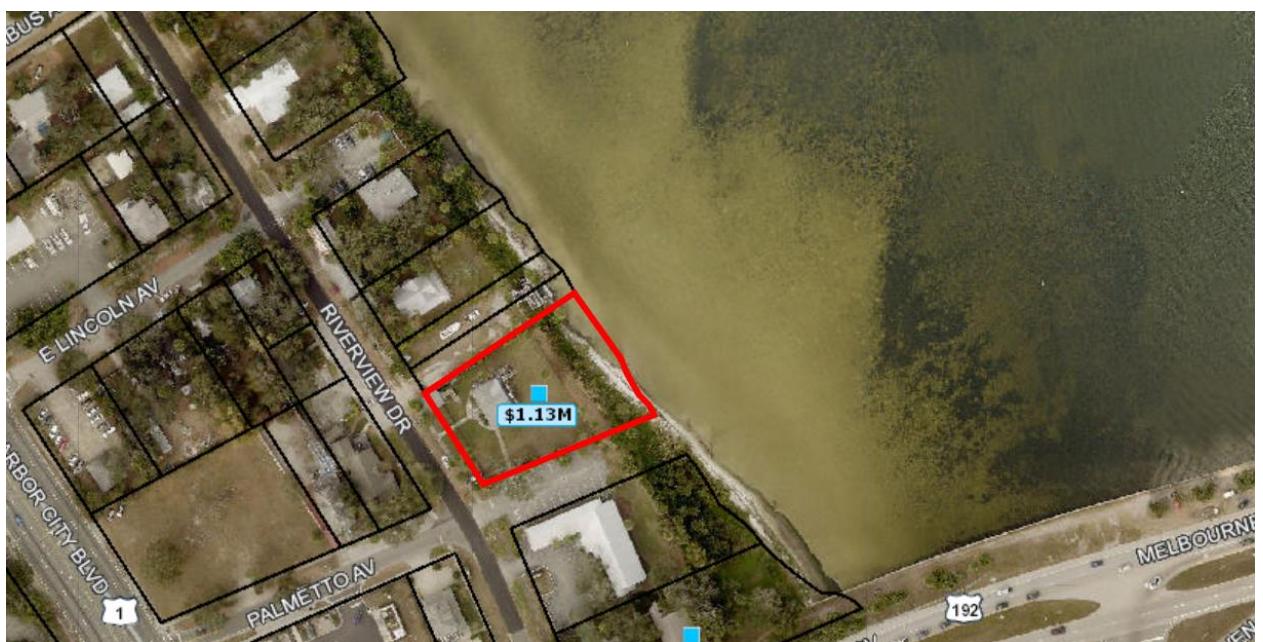
SITE DESCRIPTION: The survey area and subject property is located at 1811 Riverview Dr., Melbourne, Florida, Brevard County (Figure 1). The upland property abuts the Indian River Lagoon on the Eastern boundary, private property on the Southern and Northern boundaries, and Riverview Drive on the Western boundary (Figure 2). The location legal description is 28-37-02-FC-10-5, as listed with the Brevard County Property Appraiser's site. The submerged bottom consists of sand and dense beds of *Caulerpa prolifera* for a distance of approximately 600 feet from Ordinary High Water to a depth of 4.0 feet Mean Low Water (MLW). The three surveys conducted are 50 feet apart and approximately 600 feet water-ward from the mean low water line. The subject property and shoreline consist of a sand and high cliff with vegetation. There are no adjacent docks constructed (Figure 3).

METHODOLOGY: The survey and assessment were conducted at 0800 hours on February 5, 2022, during a low water event for the location. A minimum 50 ft. buffer around the construction area was surveyed in order to document any occurrence of seagrass or other significant submerged resources. A review of published documents was later conducted to establish the classification of the waters adjacent to the property. In addition, a regulatory review was conducted which is needed to determine what can be conducted at the site and which permitting entities will be involved.



1811 Riverview Rd.	
Date	Parcel Id:
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Figure 1: Approximate location of the subject property.



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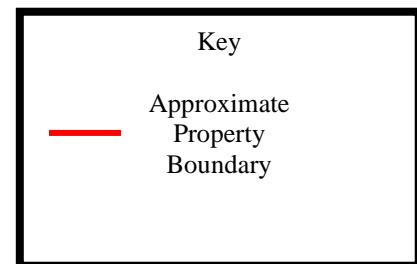


Figure 2: 2022 recent aerial of subject property.



Property to the South having vegetative shoreline and cliff



Property to the North having a vegetative shoreline, cliff, access walkway, and remnant dock structures



Image of the shoreline of the subject property showing vegetative shoreline and high cliff.



Properties directly across from subject property.

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Figure 3: Images of shoreline and surrounding properties to the subject property.

FINDINGS: The subject property has a sand shoreline with a vegetated cliff. The subject property is located along the Indian River Lagoon (IRL) but is not part of the Aquatic Preserve (Figure 4). Although it is not part of the Aquatic Preserve it is still listed as Outstanding Florida Waters of the State of Florida as defined in Section 403.031, F.S. and will thus be under the jurisdiction of the State regarding any overwater or in-water construction. Additionally, because these are navigable waterways, the Army Corps of Engineers also has jurisdiction regarding overwater or in-water construction. The aquatic habitat area is relatively shallow near shore and slowly transitioning deeper away from the shoreline. Adequate depth for a standard vessel within the IRL would be reached at 360 feet from the MLW mark. At this point the depth reaches 36 inches. The depth of the water eventually reaches 48 inches at 600 feet from the MLW mark. The entire aquatic habitat area is primarily inhabited with heavy beds of *Caulerpa prolifera* (Table 1 and Figure 5).

CONCLUSIONS: The submerged area is almost entirely *Caulerpa prolifera*. The location is also conducive to seagrass growth. Construction of an access pier and terminal platform for mooring should be allowed within the regulations. This location may require an individual permit from the State versus a general permit due to the abundance of aquatic vegetation at the location. Because of the location of the proposed structure, Florida Department of Environmental Protection (FDEP), Army Corps of Engineers, and local municipality permits will be required prior to construction. The FDEP may require a submerged land lease for this structure.

RECOMMENDATIONS: There are recommendation and some regulatory limitations on the size of a dock structure that can be built in this location in part due to the relatively shallow waters requiring longer dock to reach deeper depth as well as regulations limiting the length and size of the structure. In order to reach an adequate depth for mooring a vessel, the structure should terminate at least 360 feet from MLW. This will provide a depth of 3-feet. Most vessels that use the IRL for recreational purposes will have a draft of no deeper than 12 inches. The State requires that there is at least 12 inches of clearance over the highest resource. Since seagrass and other aquatic vegetation in this area only reach a maximum height of 12 inches, the 3-foot water depth meets the State requirements. This location will suffice, provided any vessel that will be moored in this location, will not have a draft greater than 12-inches. As aforementioned a submerged land lease may be required. This is due in part that the length of the structure to reach adequate depth may cause the entire structure to be larger than the allowed 10:1 ratio. The 10:1 ratio means a property owner is allowed to construct a structure that is 10 square feet for every one linear feet of shoreline; a total of 1,655.8 square feet for this property. If a structure needs to supersede this, so as to reach adequate depth, a submerged land lease is often required. For the protection of the aquatic environment and to reduce the chances of structural loss in the event of a high-water occurrences that normally accompanies hurricanes and tropical storms, the author recommends construction of the access pier and terminal platform be a minimum of five feet above mean high water and the decking boards be no wider than eight inches with a one-half inch gap between boards. This construction will facilitate the necessary light penetration needed for plankton survival and aquatic vegetation survival. The State may also require the terminal platform to be limited to 120 square feet due to the presence of aquatic vegetation. Boatlifts are highly encouraged because these will enhance light penetration, whereas in-water only mooring shades the bottom. The FDEP requires a 25-foot setback from the riparian rights lines unless a

signed waiver can be obtained from the neighboring property owner allowing encroachment into the setback.

LIMITATIONS: Please be advised that this report is based on the scientific opinion of the author at the time of the evaluation. The location is constantly changing system and conditions will vary over time. The findings, conclusion, and recommendations are only designed to assist in the decision-making process. What will be allowed to be constructed is ultimately up to the regulatory entities of which the author has no jurisdiction over.



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Ecological Society of America

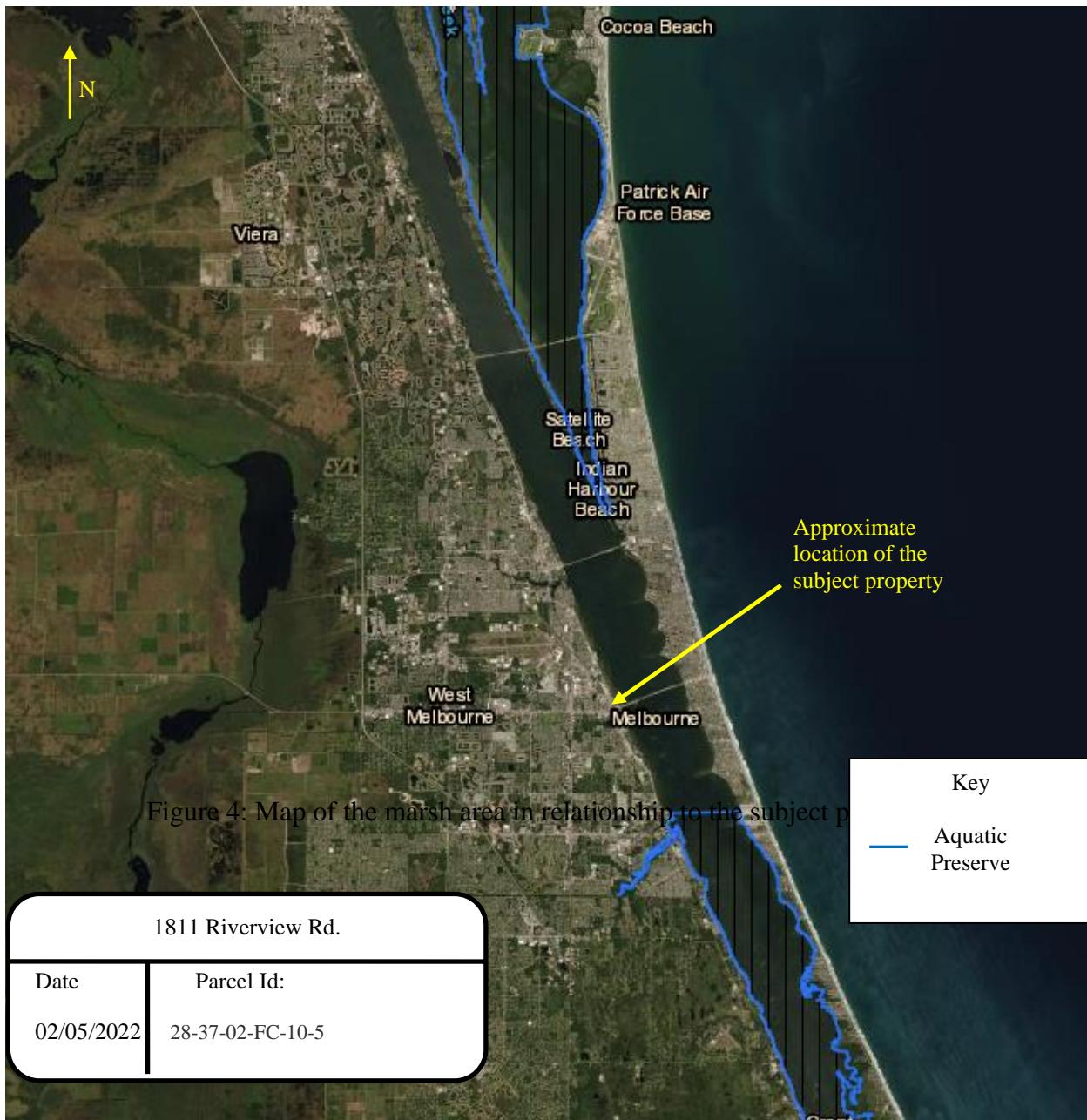


Figure 4: Map of the Indian River Lagoon Aquatic Preserve in relationship to the subject property showing that the property is outside of the Aquatic Preserve.

Table 1: Location of Significant Natural Resources, Percent Coverage, and Resource Protection Area Rating

Transect	Distance From Shoreline (ft.)	Depth (ft.)	Natural Resources Observed and Percent Coverage	Resource Protection Area Rating
1	0	0	Sand	3
1	10	0.5	Sand	3
1	20	0.5	Sand	3
1	30	0.75	Sand	3
1	40	1.0	Sand	3
1	50	1.0	<i>Caulerpa prolifera</i> <5%	2
1	60	1.0	<i>Caulerpa prolifera</i> <5%	2
1	70	1.5	<i>Caulerpa prolifera</i> <5%	2
1	80	1.5	<i>Caulerpa prolifera</i> <5%	2
1	90	1.5	<i>Caulerpa prolifera</i> 50%	2
1	100	1.75	<i>Caulerpa prolifera</i> 50%	2
1	110	1.75	<i>Caulerpa prolifera</i> 20%	2
1	120	1.75	<i>Caulerpa prolifera</i> 20%	2
1	130	1.75	<i>Caulerpa prolifera</i> 20%	2
1	140	1.75	<i>Caulerpa prolifera</i> 30%	2
1	150	1.75	<i>Caulerpa prolifera</i> 20%	2
1	160	1.75	<i>Caulerpa prolifera</i> 50%	2
1	170	1.75	<i>Caulerpa prolifera</i> 50%	2
1	180	1.75	<i>Caulerpa prolifera</i> 40%	2
1	190	2.0	<i>Caulerpa prolifera</i> >80%	2
1	200	2.0	<i>Caulerpa prolifera</i> >80%	2
1	210	2.0	<i>Caulerpa prolifera</i> >80%	2
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1	310	2.75	<i>Caulerpa prolifera</i> >80%	2
1	320	2.75	<i>Caulerpa prolifera</i>	2

1	330	2.75	>80% <i>Caulerpa prolifera</i>	2
1	340	2.75	>80% <i>Caulerpa prolifera</i>	2
1	350	2.75	>80% <i>Caulerpa prolifera</i>	2
1	360	3.0	>80% <i>Caulerpa prolifera</i>	2
1	370	3.0	>80% <i>Caulerpa prolifera</i>	2
1	380	3.25	>80% <i>Caulerpa prolifera</i>	2
1	390	3.25	>80% <i>Caulerpa prolifera</i>	2
1	400	3.25	>80% <i>Caulerpa prolifera</i>	2
1	410	3.25	>80% <i>Caulerpa prolifera</i>	2
1	420	3.25	>80% <i>Caulerpa prolifera</i>	2
1	430	3.25	<i>Caulerpa prolifera</i> >80%	2
1	440	3.25	<i>Caulerpa prolifera</i> >80%	2
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1	560	3.5	<i>Caulerpa prolifera</i> >80%	2
1	570	3.75	<i>Caulerpa prolifera</i> >80%	2
1	580	3.75	<i>Caulerpa prolifera</i> >80%	2
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1	600	4.0	<i>Caulerpa prolifera</i> >80%	2
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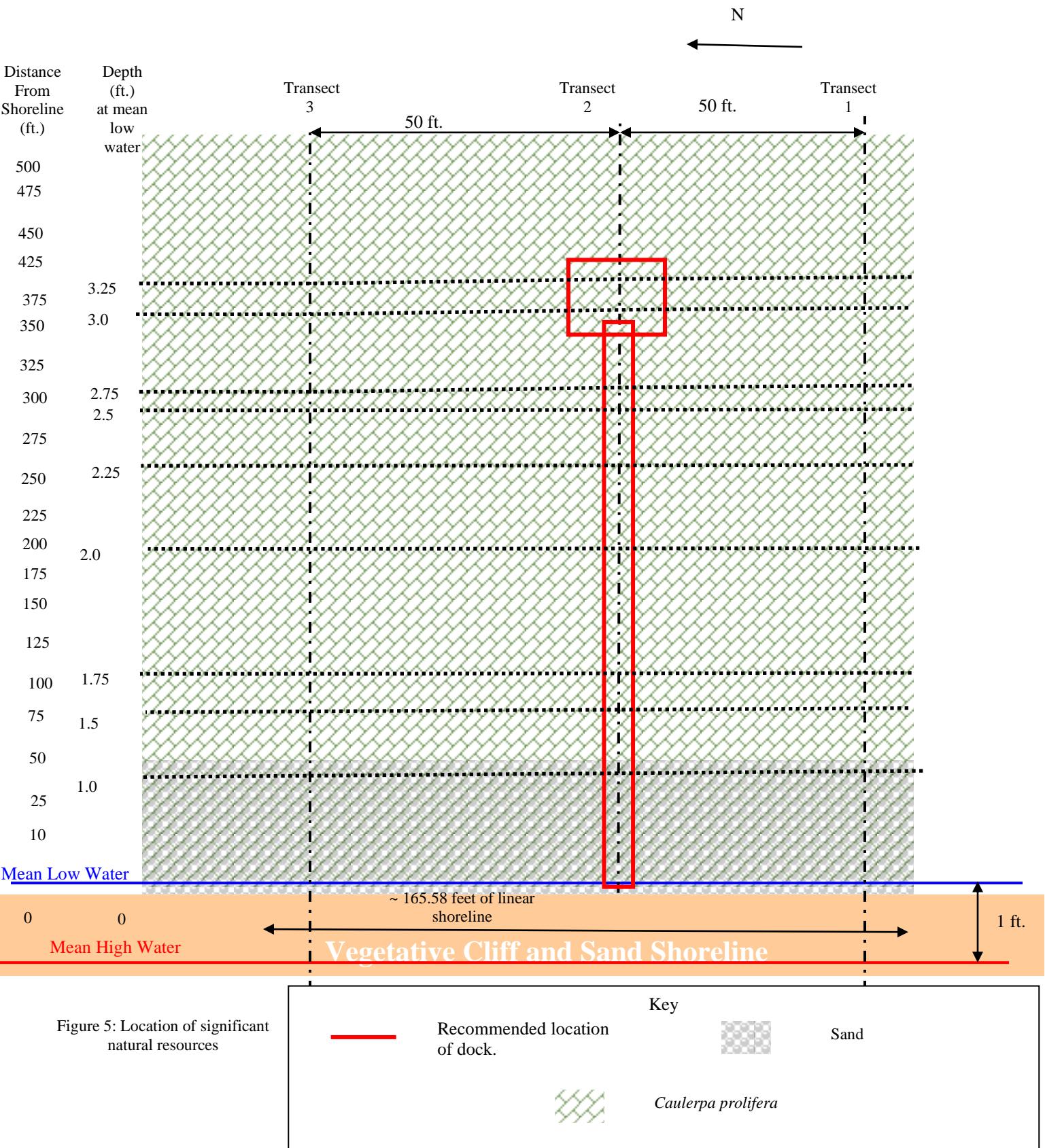


Figure 5: Location of significant natural resources