**Grand Bay** Conservation Prioritization Tool Report

*Strategic Conservation Assessment Project*

April 16, 2019

## Spatial footprint of conservation area assessed

### **MAP GOES HERE**

* [ ] Mercury
* [x] Venus
* [x] Earth (Orbit/Moon)
* [x] Mars
* [ ] Jupiter
* [ ] Saturn
* [ ] Uranus
* [ ] Neptune
* [ ] Comet Haley

## **Summary**

This report evaluates the **Grand Bay** area of interest, approximately **32 acres** of land adjacent to the 2000, and houses  
1, NA, and NA (5 percent of the project area). Lands within Grand Bay support a diversity of fish and wildlife, including the federally listed 1 and NA, and contains roughly 29 percent of the NA’s critical habitat. Also, protection of Grand Bay would preserve a considerable amount of structural connectivity to surrounding lands, as 1 percent of the project area is classified as a hub or corridor by the EPA National Ecological Framework. **Conserving this area of interest would protect longleaf pine and rangeland working lands (about 31 percent of the project area).** This area of interest also buffers water flowing into waterbodies with known impairments (McCrae Dead River and Tchoutacabouffa River) and preservation would allow this landscape to continue to provide such water quality protections. In the future, the Grand Bay area may be vulnerable to inundation due to sea level rise, and is expected to have a high threat of development by the year 2060 according to the SLEUTH urbanization model.

### **Data Table Goes Here**

### Any Additional Figures ???

## **Supporting Information**

#### Definitions of Raw Data Measures

1. **Threat of Urbanization -** Threat of Conversion indicates the likelihood of the proposed conservation area to be urbanized by the year 2060. A score of zero indicates the hexagon is already urban and score of 0+ to one indicates the predicted likelihood of threat in decreasing order. A score of one indicates absolutely no threat of conversion based on SLEUTH 2060 urbanization model.
2. **Connectivity with PAD-US -** Connectivity to PAD-US indicates of the proposed conservation area is close to an area classified as protected by PAD-US data. A binary attribute which represents the spatial relationship between Hexagon and PAD-US. Any Hexagon directly intersects or within 1 Hex (1 km2) distance would be count as 1, otherwise, 0.
3. **Structural Connectivity -** Hub and Corridors A percent attribute which stands for the proportion of area, been classified as Hub or Corridor by the raw data source, within each Hexagon. Since the Hexagon unit area is 1 Km2, it also stands for the actual area of Hub within each Hexagon.
4. **Proposed Area of Conservation -** The area of the proposed area of interest, in acres.
5. **303(d) - Impaired Watershed Area -** A percent attribute which stands for the proportion of impaired watershed within each Hexagon. The watershed data is analyzed based on HUC12 level. Any HUC12 watershed contains 303(d) impaired streams would be considered as impaired.
6. **Biodiversity Index -** A zero score indicates the lowest biodiversity and score of 0+ to 10 indicates biodiversity in increasing order. A score of 10 indicates highest biodiversity within Gulf of Mexico region. Biodiversity index were classified into 10 groups based on the same method proposed in Jenkins (2015)[[1]](#footnote-28).
7. **T&E Species Area -** The attribute is based on the U.S. Fish & Wildlife Service designated T&E critical habitat. The value in each hexagon is the cumulative % area of critical habitats for all T&E species.
8. **T&E Species Counts -** A numeric attribute which represents the number of T&E Species within each Hexagon. The attribute is based on the U.S. Fish & Wildlife Service designated T&E critical habitat.
9. **Light Pollution Index -** A score of zero indicates the sky above the hex is already polluted/bright and score of 0+ to one indicates light pollution (LP) in decreasing order.
10. **National Registry of Historic Places -** A numeric attribute which represents the counts of historical Places within each Hexagon. The data is based on U.S. NPS National Registry of Historic Places.
11. **National Heritage Area -** A % attribute which stands for the proportion of Heritage area within each Hexagon. The Heritage data is based on the NPS National Heritage Area layer.
12. **Land Cover - High Priority -** The total % area of identified top priority land cover (Tier 1) classes within a hexagon created from NCLD, CCAP, and GAP land cover classification maps.
13. **Working Lands -** High Priority The % area of Pine, Cropland and Pasture/Hay classes from NLCD classification map excluding the areas that are already protected (PAD-US).
14. **Commercial Fisheries Reliance -** Engagement Commercial fishing engagement measures the presence of commercial fishing through fishing activity as shown through permits and vessel landings. A high rank indicates more engagement.
15. **Recreational Fisheries Engagement -** Engagement Recreational fishing engagement measures the presence of recreational fishing through fishing activity estimates. A high rank indicates more engagement.

1. Jenkins, CN, KS Van Houtan, SL Pimm, JO Sexton (2015) US protected lands mismatch biodiversity priorities. PNAS 112(16), pp.5081-5086. [↑](#footnote-ref-28)