



# **DARKER BEACHES AND BRIGHTER MINDS USING HOT SPOT ANALYSES TO MONITOR LIGHTING COMPLIANCE AND SPARK CHANGE IN PALM BEACH COUNTY, FL**

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# PALM BEACH COUNTY

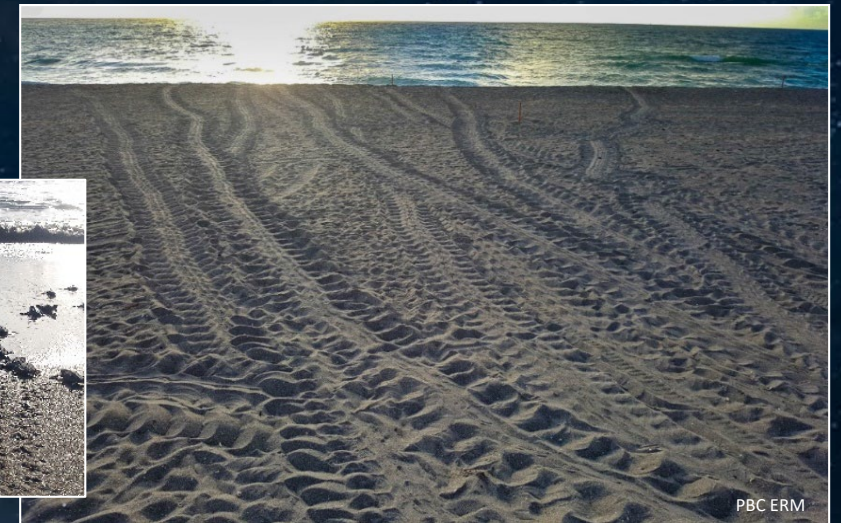


PBC Population 2021  
1.498 million  
(3<sup>rd</sup> in the state)

Miles of Coastline  
~46

2021 Total Number of Sea Turtle  
Crawls (Nests + FC)  
78,336

Crawls per mile  
~1,734  
That's a crawl every 3 feet!





# SEA TURTLE PROTECTION PALM BEACH COUNTY

- Unified Land Development Code, Article 14, Chapter A. - Sea Turtle Protection and Sand Preservation (ULDC 14.A)
- Sets restrictions on coastal lighting activity to protect sea turtle nesting habitat
- Established in 1987
- Amended in 2009, 2011
- Lighting Plan Applications, Obstructions, Sand Preservation

**ARTICLE 14  
ENVIRONMENTAL STANDARDS**

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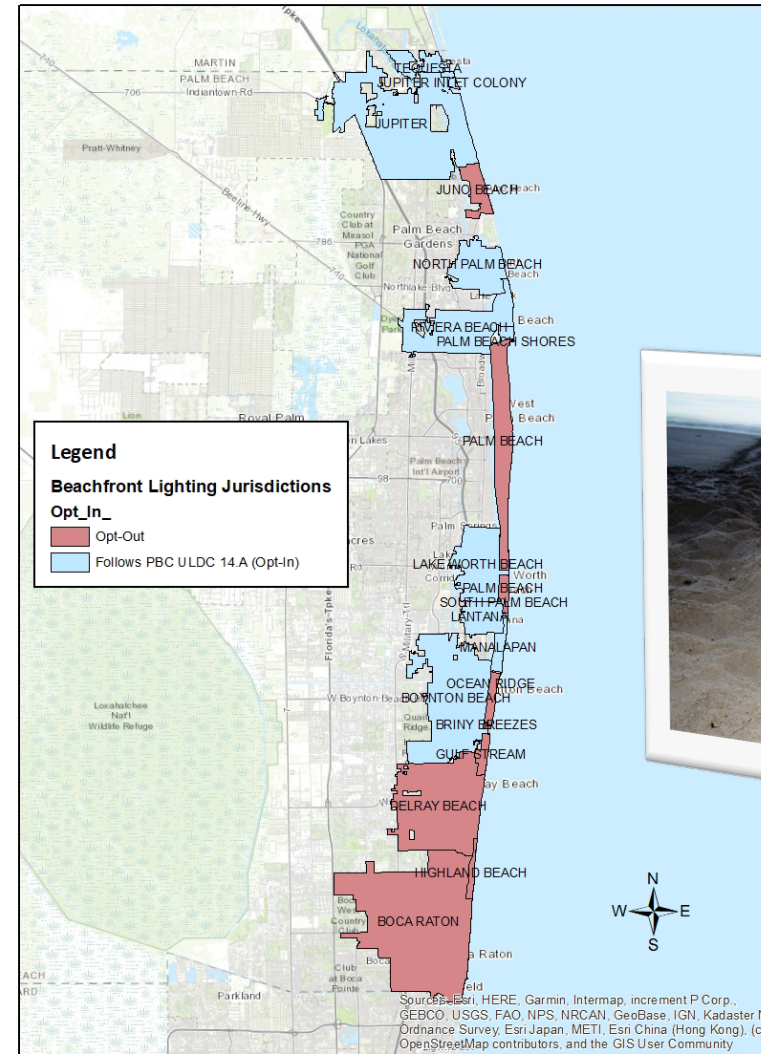


# ULDC 14.A JURISDICTION

- Municipalities within PBC have option to Opt-in or Opt-out of ULDC 14.A
- Opt-in municipalities are monitored and enforced by PBC ERM
- Opt-out municipalities responsible for enforcing an “equally or more stringent” ordinance of their own
- ULDC 14.A. establishes a Sea Turtle Protection Zone (STPZ) of 600 feet from Mean High Water (MHW)



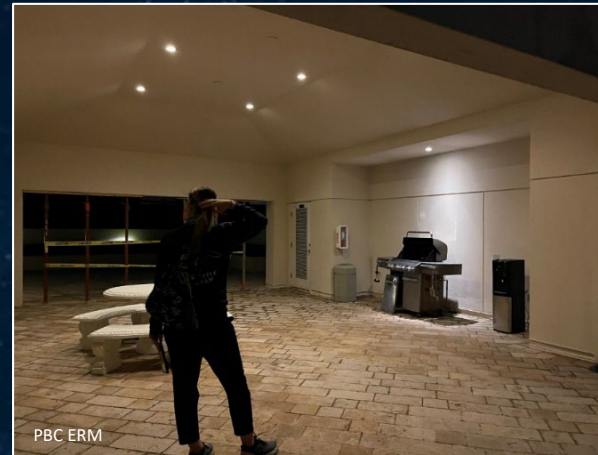
Sea Turtle Protection Jurisdiction Map



# PBC ERM DUTIES



- TASK 1 – Conduct nighttime lighting surveys
- TASK 2 – Assess compliance (non-approved interior/exterior lights visible from the beach w/in 600 feet)
- TASK 3 – Conduct a minimum of 3 lighting surveys
- TASK 4 - Issue notices of non-compliance
- TASK 5 – Meet performance standards, achieve 95% compliance rate



# DARKER BEACHES AND BRIGHTER MINDS

- Observed Low to High Compliance rate from 1<sup>st</sup> to 3<sup>rd</sup> survey when correspondence was involved
- >300 parcels, millions of coastal residents/visitors each year
- Determine high priority areas





# SPARK A CHANGE!

- Create a rubric for scoring properties
- Evaluate properties, assign scores
- Input property scores into GIS map layer
- Focus efforts on hot spots
  - High to low priority areas
  - High scored properties

Municipality	Property Address	PARID	S1_2022	S2_2022	S3_2022
TEQUESTA	Beach Rd	00434030010001891	0	0	0
TEQUESTA	400 Beach Rd	6043403204	8	2	2
TEQUESTA	350 Beach Rd	6043403012	4	2	2
TEQUESTA	300 Beach Rd	6043403010	8	3	2
TEQUESTA	250 Beach Rd	6043403112	6	0	0
TEQUESTA	200 Beach Rd	6043403201	4	5	2
TEQUESTA	100 Beach Rd	6043403202	8	6	3
JUPITER INLET COLONY	1 Ocean Dr	32434031010000010	2	0	2
JUPITER INLET COLONY	2 Ocean Dr	32434031010000020	2	0	0
JUPITER INLET COLONY	3 Ocean Dr	32434031010000030	0	0	4
JUPITER INLET COLONY	5 Ocean Dr	32434031010000050	2	4	2
JUPITER INLET COLONY	6 Ocean Dr	32434031010000060	2	0	0
JUPITER INLET COLONY	7 Ocean Dr	32434031010000070	4	0	0
JUPITER INLET COLONY	8 Ocean Dr	32434031010000080	2	0	0
JUPITER INLET COLONY	9 Ocean Dr	32434031010000090	2	0	0
JUPITER INLET COLONY	10 Ocean Dr	32434031010000100	0	0	0
JUPITER INLET COLONY	11 Ocean Dr	32434031010000111	0	0	0
JUPITER INLET COLONY	12 Ocean Dr	32434031010000112	0	0	0
JUPITER INLET COLONY	13 Ocean Dr	32434031010000130	0	0	2
JUPITER INLET COLONY	14 Ocean Dr	32434031010000140	6	2	2
JUPITER INLET COLONY	15 Ocean Dr	32434031010000150	2	0	0
JUPITER INLET COLONY	16 Ocean Dr	32434031010000160	5	4	0
JUPITER INLET COLONY	17 Ocean Dr	32434031010000170	0	0	0
JUPITER INLET COLONY	18 Ocean Dr	32434031010000180	2	0	0
JUPITER INLET COLONY	19 Ocean Dr	32434031010000190	0	0	0
JUPITER INLET COLONY	20 Ocean Dr	32434031010000200	0	0	0
JUPITER INLET COLONY	21 Ocean Dr	32434031010000210	6	5	0
JUPITER INLET COLONY	22 Ocean Dr	32434031010000220	0	0	0
JUPITER INLET COLONY	23 Ocean Dr	32434031010000230	0	0	0
JUPITER INLET COLONY	24 Ocean Dr	32434031010000240	4	0	0
JUPITER INLET COLONY	241 Ocean Dr	32434031100002410	6	2	2
JUPITER INLET COLONY	244 Ocean Dr	32434031100002440	2	0	2
JUPITER	19075 DuBois Rd	00434030010002061	0	0	0
JUPITER	1375 Jupiter Beach Rd	00434030010002062	3	0	0
JUPITER	201 Ocean Trail Way	3043410500030020	2	2	0
JUPITER	400 Ocean Trail Way	3043410514	6	4	4
JUPITER	300 Ocean Trail Way	3043410512	6	4	4
JUPITER	200 Ocean Trail Way	3043410506	2	2	2
JUPITER	100 Ocean Trail Way	3043410509	2	2	2

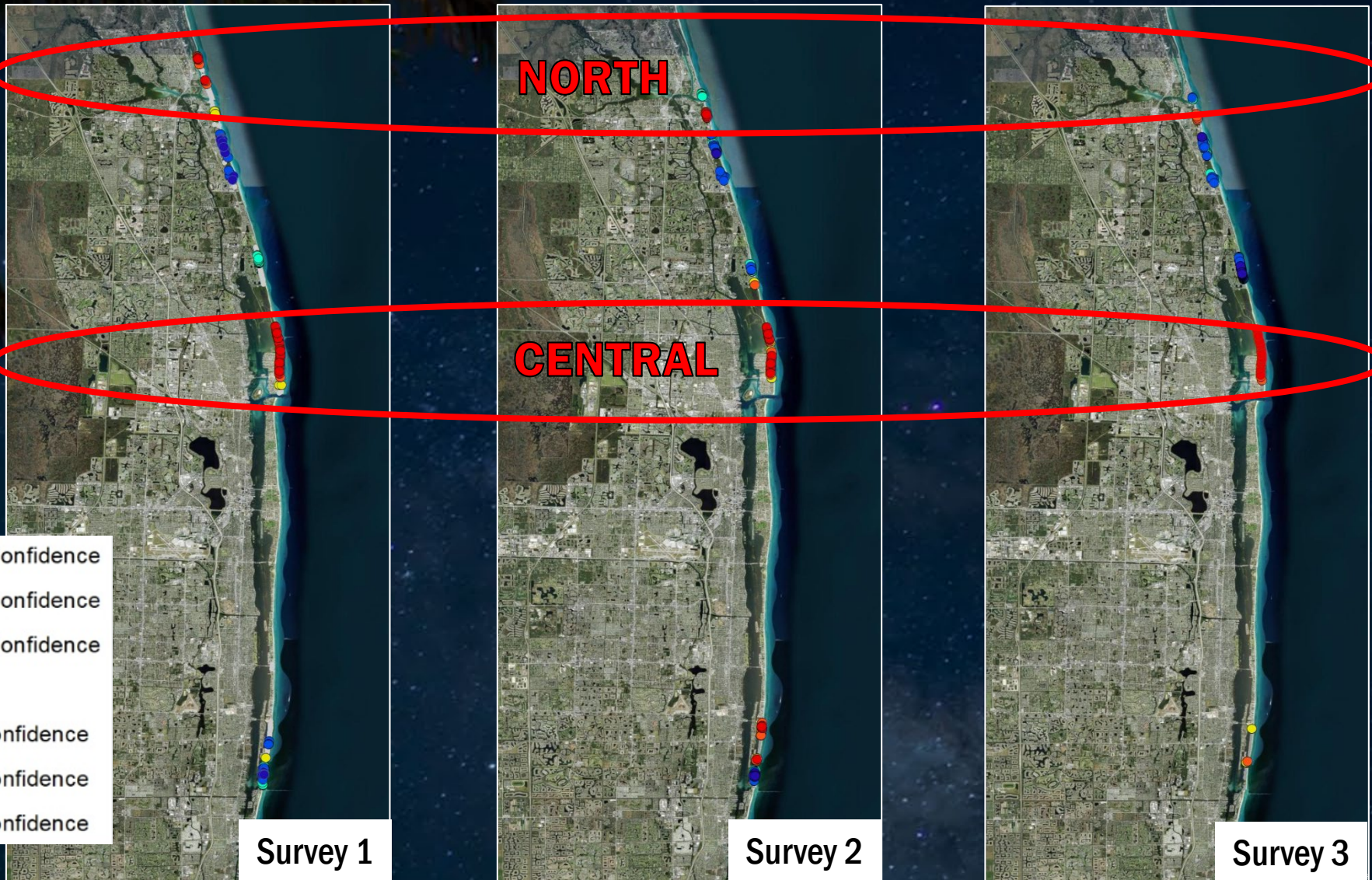


## Non-Compliance Ranking

<b>0</b>	<b>Compliant with Palm Beach County ULDC Article 14.A</b>
<b>1</b>	<b>Adjustments made to 2</b>
<b>2</b>	<b>Interior lighting, or a minor issue</b>
<b>3</b>	<b>Adjustments made to 4</b>
<b>4</b>	<b>2 Distinct non-compliant fixtures/issues, or direct source of bright lighting likely to cause disorientations</b>
<b>5</b>	<b>Adjustments made to 6 or an addition to 4</b>
<b>6</b>	<b>3 Distinct non-compliant fixtures/issues</b>
<b>7</b>	<b>Adjustments made to 8</b>
<b>8</b>	<b>4 – 6 Distinct non-compliant fixtures/issues</b>
<b>9</b>	<b>Adjustments made to 10</b>
<b>10</b>	<b>6+ Distinct non-compliant fixtures/issues</b>



# 2022 FULL COUNTY HOT SPOT ANALYSIS



# NORTH COUNTY

## BEACH MORPHOLOGY

Ongoing dune restoration  
County Park  
Inlet, wider beach

## INFRASTRUCTURE

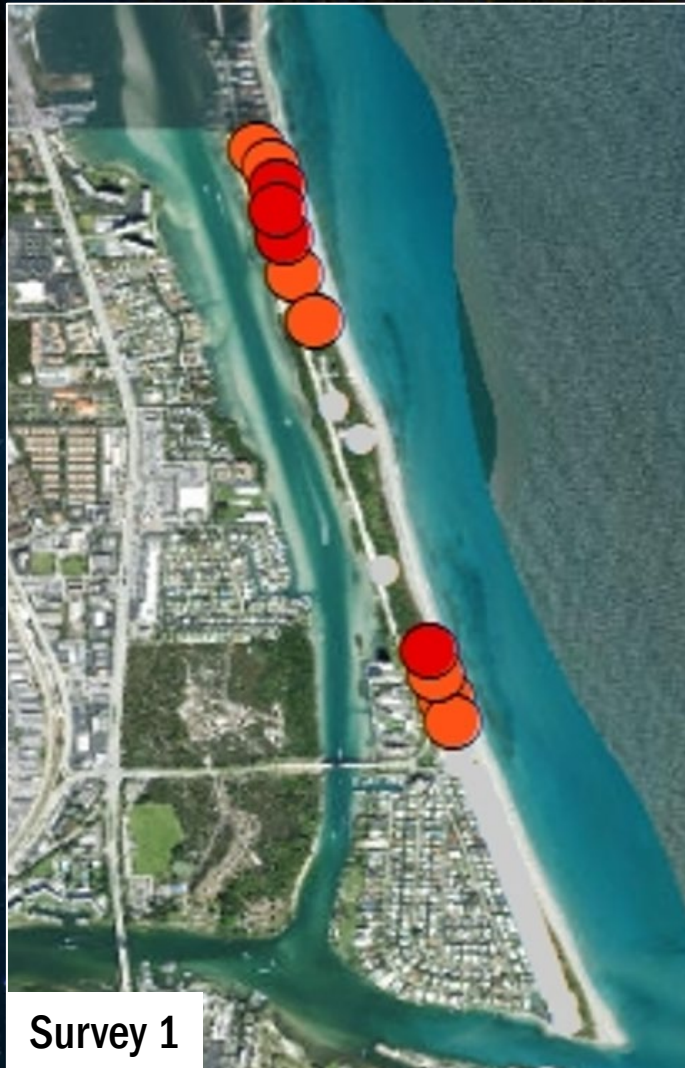
Small multi-family condos  
< 10 stories  
Single family homes

## POPULATION DYNAMICS

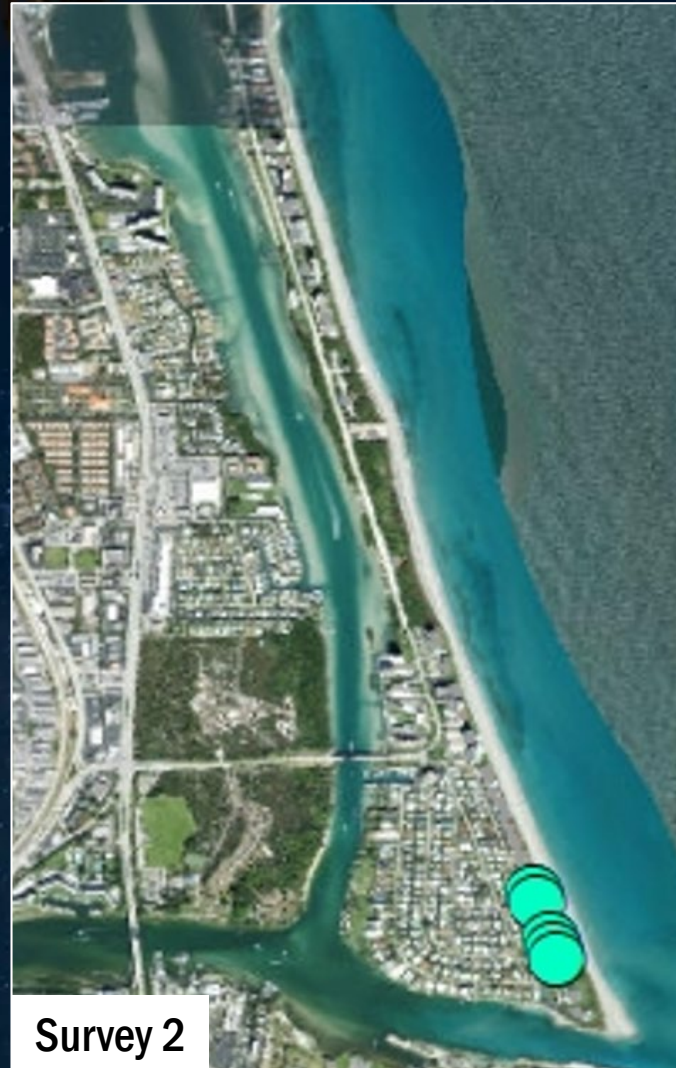
Moderately populated  
Seasonal residency



# 2022 HOT SPOT – NORTH COUNTY



Survey 1



Survey 2



Survey 3

# CENTRAL COUNTY

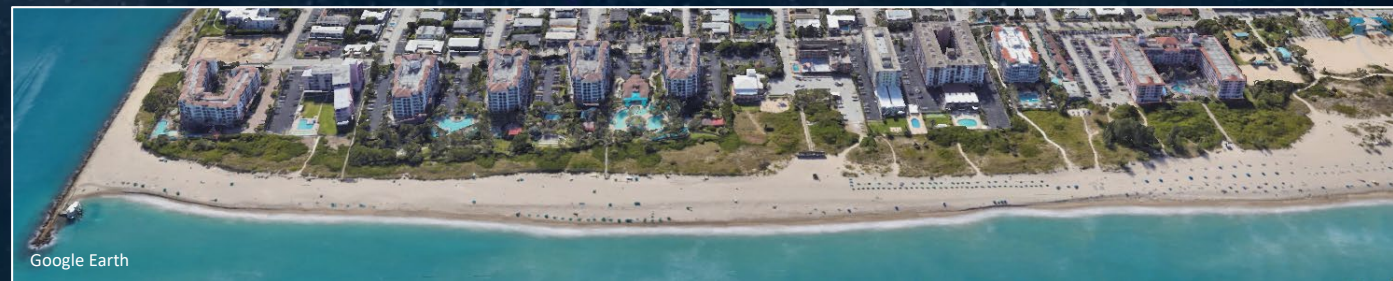
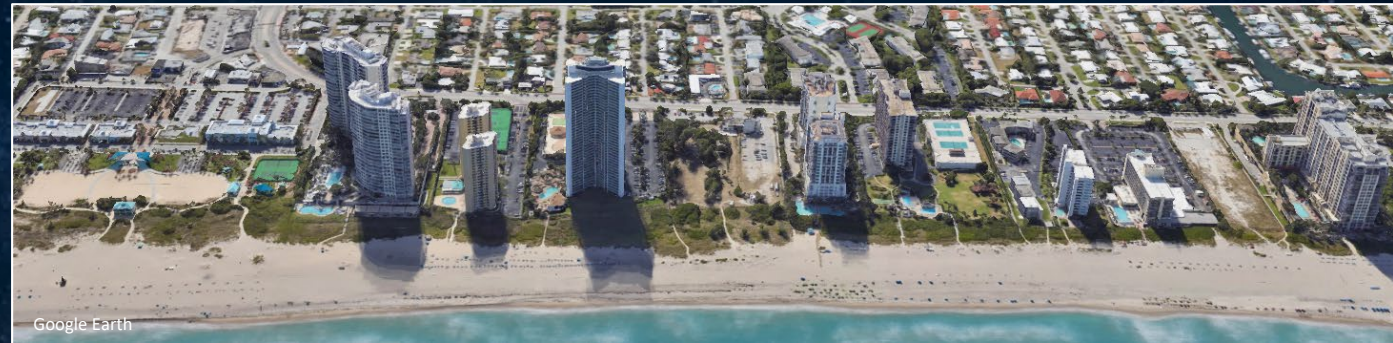
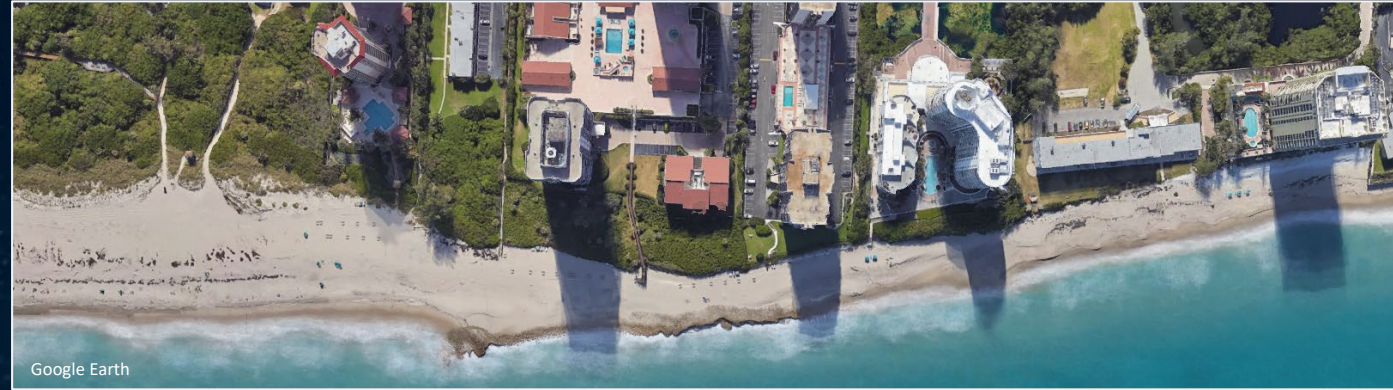


## BEACH MORPHOLOGY

Ongoing dune restoration

Wide center, offshore hardbottom, and  
rocks on beach

Inlet, sand transfer plant, easternmost  
point in FL



## INFRASTRUCTURE

Multi-family, multi-unit

Commercial (hotels/time-shares)

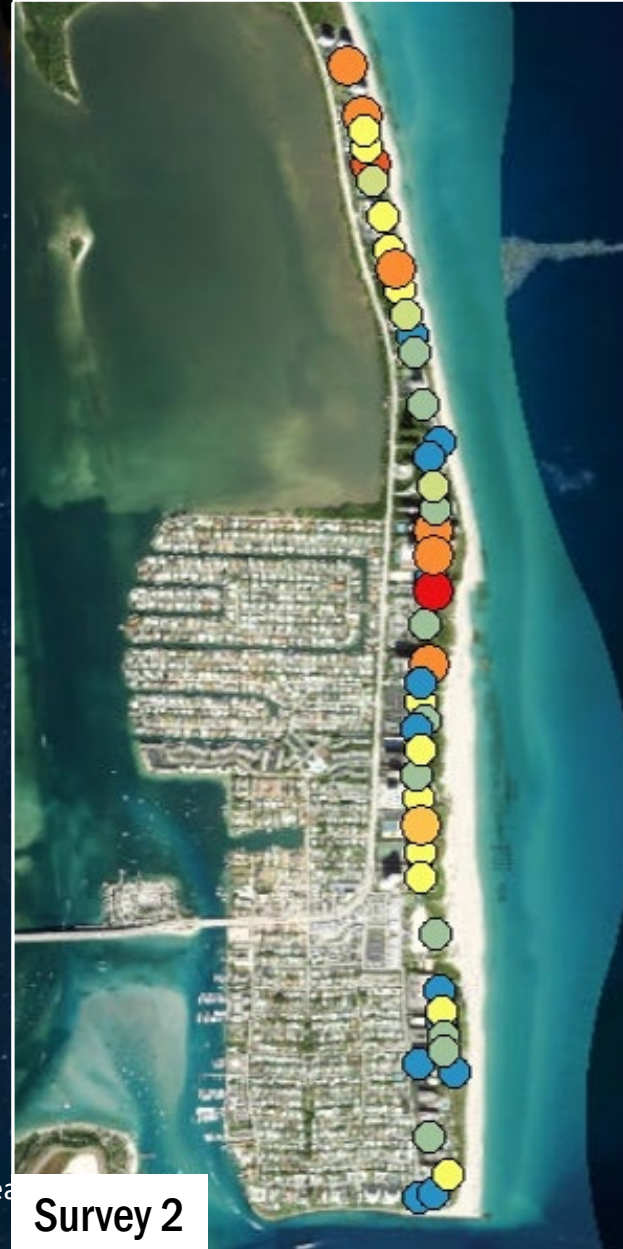
Multi-story, most > 15 stories

## POPULATION DYNAMICS

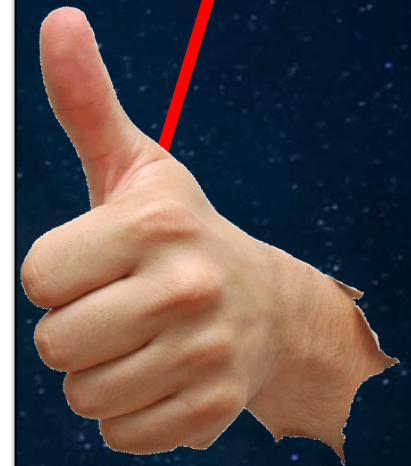
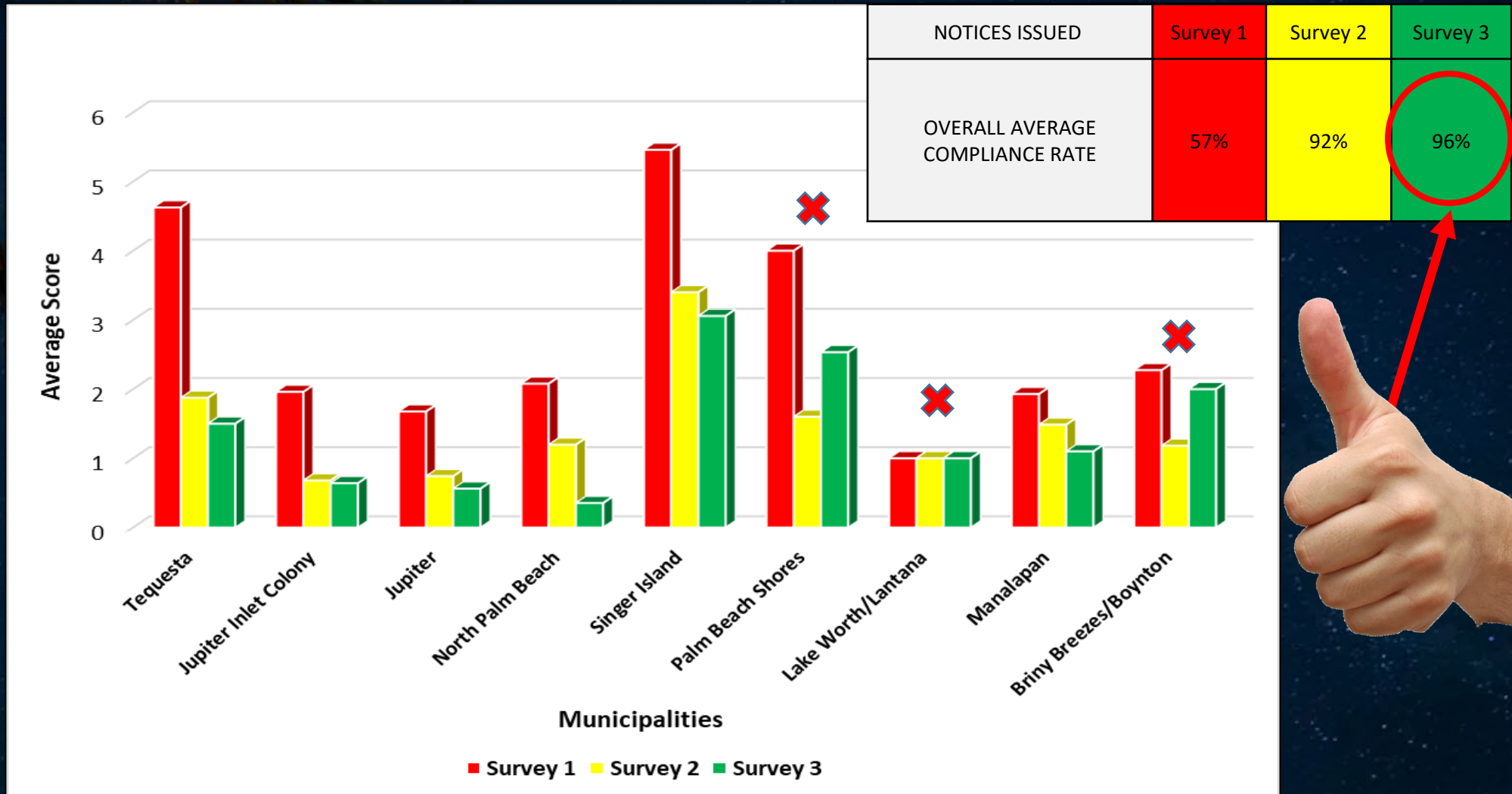
Very Dense

Transient

# 2022 HOT SPOT – CENTRAL COUNTY



# 2022 AVERAGE COMPLIANCE SCORES AT ALL MUNICIPALITIES FOR EACH SURVEY



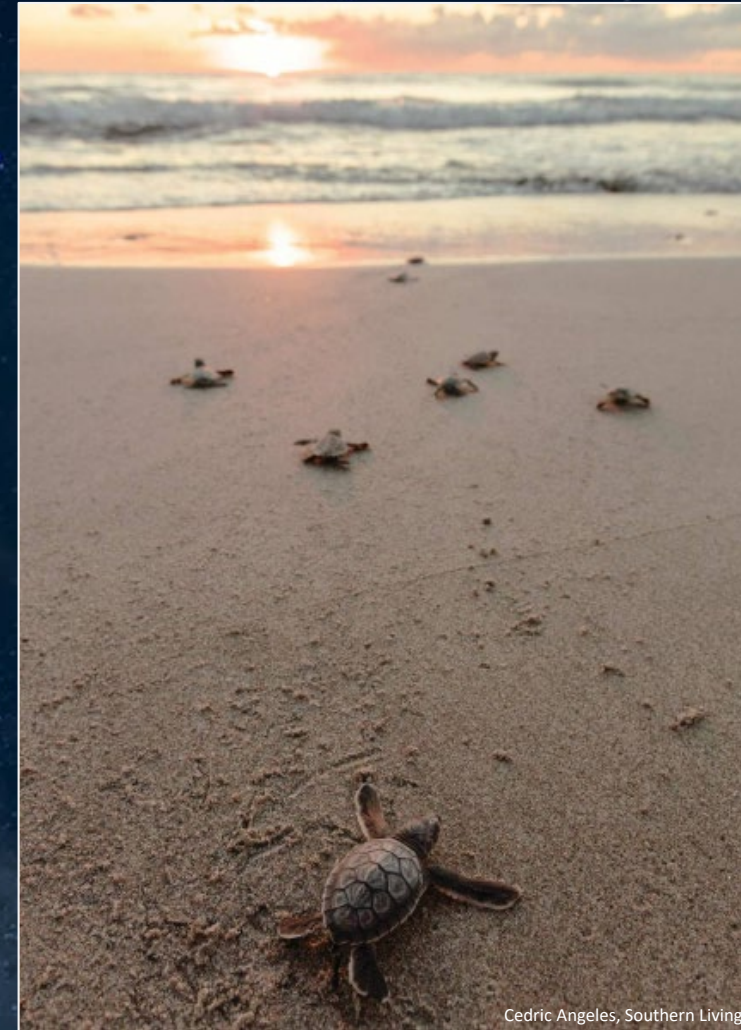


# SPARK CHANGE

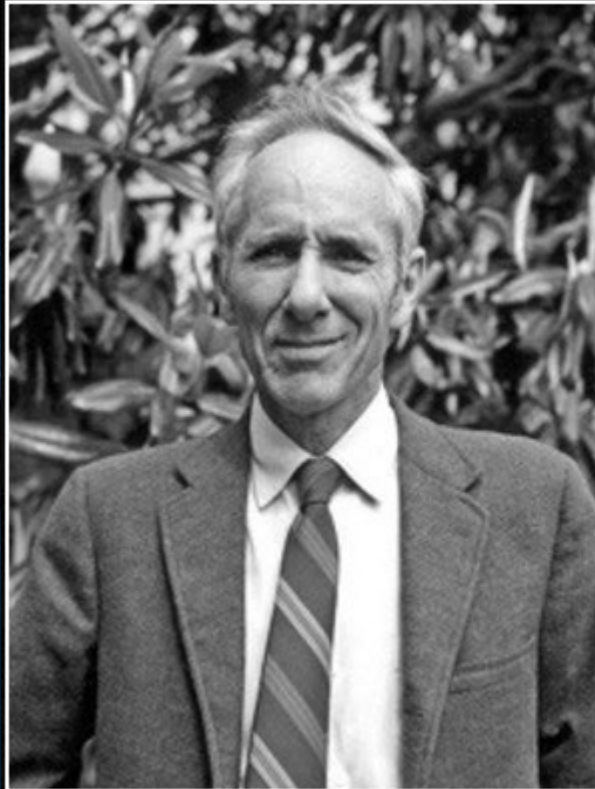
Assess priority areas, **connect** people with the resource.

Build a connection with one another and create a **community**.

Create a community, and **change** begins to happen.



Cedric Angeles, Southern Living



For most of the wild things on earth,  
the future must depend on the  
conscience of mankind.

— *Archie Carr* —

AZ QUOTES

**Thank you, I wish you DARK SKIES!**





# Any Questions?



## Thank you!

*FSBPA Committee  
Palm Beach County*

*Colette McEntee, ERM*

*Emma Rimmer, Earthjustice (formerly ERM)*

*TJ Steinhoff, ERM*

*Matt Mitchell, ERM*

*Julie Bishop, formerly ERM*

*Mike Stahl, ERM*

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