Mapping Oyster Reefs Using Drones versus Aerial Photos

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Background

PRIORIA ROBOTICS, INC
606 SE Depot Ave, Gainesville, FL 32601

• UAS-Hex aircraft
• Flight elevation: 180’
• 2 Flight days @low tide
• ~140 acres, 4 miles of shoreline
• $1,200 included processing
Imagery

Georeferenced Tiles

Zoomed to reef level

Scale = 1:20,000

Scale = 1:100
• Zoomed in to reef level
• Hand drew polygons
• 572 total polygons/reefs
• 12.36 Acres of oyster reef
Aerial Comparisons

2008

SJRWMD % present in correct location (assuming Prioria shapefile is most accurate): 77.3.
22.7% misrepresented.

Layer | Acres
---|---
SJRWMD 2008 | 2.99
Prioria | 12.36
Intersection | 2.31

2015

SJRWMD % present in correct location (assuming Prioria shapefile is most accurate): 51.3.
48.7% misrepresented.

Layer | Acres
---|---
SJRWMD 2015 | 13.07
Prioria | 12.36
Intersection | 6.71

3/6/2017
Aerial Comparisons

Over exaggerated Polygons
Pros

- Multi-spectral imagery; 5 bands collected at same time.
- Wildlife identification
- Posting Prop Scarring areas
- Marine debris

Same coverage can be used for additional resource management issues
Cons

Difficult to mosaic over water as there are no defining features

Glare off the water
 JBK Unmanned Systems  
 9 Seathorn Path, Palm Coast, FL  

• Elevation - 200’  
• 2.2 inches per pixel  
• Flew between 11am-1pm  
• Water Depth? Equipment?  
• Width of waterbody (both ~350’ wide).  

3/6/2017
Conclusion

Pros

• Multiple applications
• Focus on critical habitats
• Ground truth large-scale maps

Cons

• Cost and time prohibitive for large scale applications
• Needs improved technology/methods for flying over water.
Thank You,
Questions?

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