Commercial Imagery for Water Quality

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Purpose: Water quality monitoring applications.

Study Objective: Repurpose Digital Globe WorldView, Planet Dove and RapidEye data to derive water quality bio-geophysical variables such as chlorophyll-a, seagrass extent, and surface oil detection.

Imagery: WorldView, RapidEye, Dove

Findings: WorldView and RapidEye may be used for deriving seagrass extent and water column chlorophyll given the high spatial resolution and multispectral bands. There are limits due to metadata issues, infrequent revisit cycle and potential impacts due to band striping. Additional work is needed.
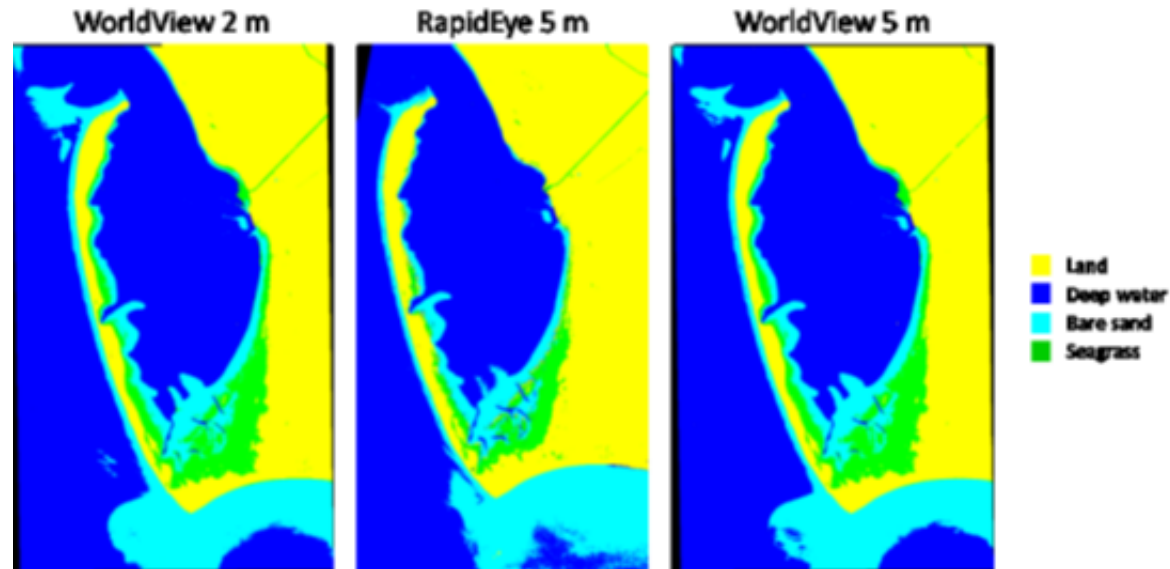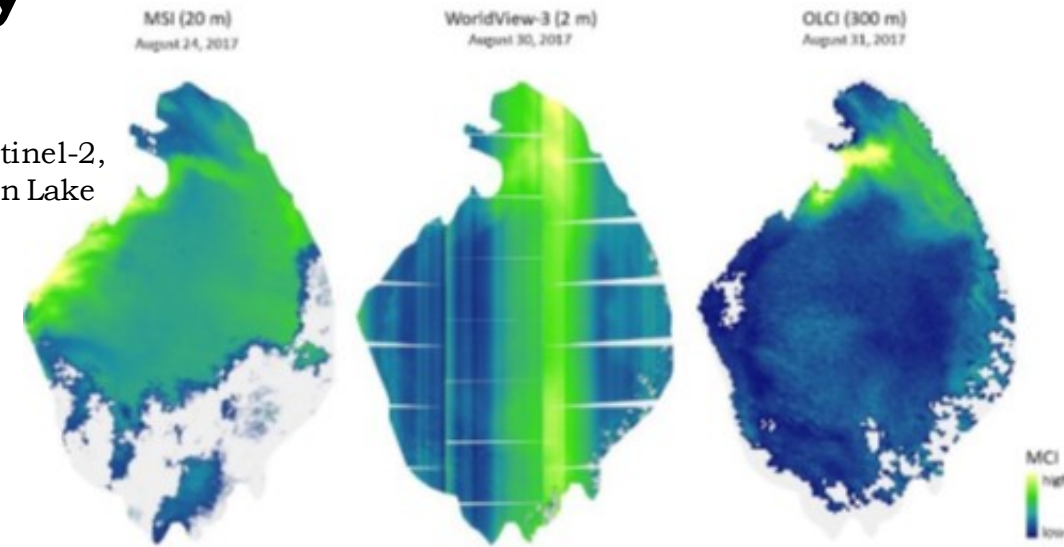
Publications: Schaeffer & Myer. 2020. Remote Sensing Letters. 11(6): 535-544.

Islam et al. (*In Review*). Data Science & Engineering.

Coffer et al. (*In EPA Clearance*). Remote Sensing of Environment.

Chlorophyll index from Sentinel-2, WorldView and Sentinel-3 in Lake Okeechobee.

Results of convoluted neural network classification of seagrass, sand, land, and water from WorldView-2 2m, RapidEye 5m, and down sampled WorldView-2 5m data.