Table 3 Seagrass (Percent Cover [horizontal projected foliage])

	DATA OPTION 1: Quickbird 2	**DATA OPTION 2: Airborne hyper-spectral data**
Spatial Dimensions		
Area to cover	12 km x 12 km per scene	Up to 1000 km ^{2}
Mapping unit	068m panchromatic 4.0 m multi-spectral	0.5m – 5m
Positional accuracy	Dependent on georef-erencing process	Dependent on Geo-referencing process
Temporal Dimensions		
When	Approx 10.45 am	User defined
How often	Minimum every 4 days	User defined (can be < 1 day)
Variable to map	Benthic (species, cover, biomass)	Benthic (species, cover , biomass)
Environmental / Sensor Restrictions	For sub-tidal vegetation to depth limited by water clarity. Inter-tidal and supra-tidal vegetation can have water on top. Not possible for turbid water Clouds, strong winds and breaking waves.	For sub-tidal vegetation to depth limited by water clarity. Inter-tidal and supra-tidal vegetation can have water on top. Not possible for turbid water Strong winds, breaking waves
Processing technique **(Output)**	Image classification or feature detection using segmentation and classification Empirical model built using field survey data to estimate cover from image pixel values. (Vegetation type map and target features) Note: The ability to map specific targets will depend on their growth form, percent cover, substrate colour	Image classification or feature detection using segmentation and classification Empirical model built using field survey data to estimate cover from image pixel values. (Vegetation type map and target features) Note: The ability to map specific targets will depend on their growth form, percent cover, substrate colour and extent.

	and extent.	
Resources – Hardware and Software	PC Image processing software GIS with image classification module (e.g. ARCGIS Image Analyst)	PC Image processing software with Hyper-spectral analysis capabilities, including sub-pixel mapping techniques.
Resource – Personnel	Trained in image classification Experience with high spatial resolution data Knowledge of area to be mapped	Trained in hyper-spectral data processing. Knowledge of area to be mapped
References: Note these are some example references	(Lathrop et al., 2006; Phinn et al., 2008; Roelfsema et al., 2009)	(Brando 2004; Lathrop et al., 2006; Phinn et al., 2008; Roelfsema et al., 2009)

Brando, V., Dekker, A., Phinn, S.R., and Roelfsema, C. (2004). Mapping and Monitoring Coastal Environments Using Remote Sensing. Catchment to Reef: Water Quality Issues in the Great Barrier Reef Region, Townsville, Australia, CRC Reef Research Centre.

Lathrop, R. G., P. Montesano and S. Haag (2006). "A multi-scale segmentation approach to mapping seagrass habitats using airborne digital camera imagery." Photogrammetric Engineering and Remote Sensing 72(6): 665-675.

Phinn, S., C. Roelfsema, A. Dekker, V. Brando and J. Anstee (2008). "Mapping seagrass species, cover and biomass in shallow waters: An assessment of satellite multi-spectral and airborne hyper-spectral imaging systems in Moreton Bay (Australia)." Remote Sensing of Environment 112: 3413-3425.

Roelfsema, C. M., S. R. Phinn, N. Udy and P. Maxwell (2009). "An Integrated Field and Remote Sensing Approach for Mapping Seagrass Cover, Moreton Bay, Australia." Journal of Spatial Science 54(1): 45-62.