Table 11 Coral Reefs: Coral Cover

	DATA OPTION 1: Quickbird 2	**DATA OPTION 2: Airborne hyper-spectral**
Spatial Dimensions		
Area to cover	12 km x 12 km per scene	Up to 1000 km ^{2}
Mapping unit	0.68 m panchromatic 2.44 m multi-spectral	0.5m – 5m
Positional accuracy	Dependent on Geo-referencing process	Dependent on Geo-referencing process
Temporal Dimensions		
When	On request	User defined
How often	User defined but minimum every 5 days	User defined (can be < 1 day)
Variable to map	Benthic Community Scale - % benthic cover	Benthic Community Scale - % benthic cover
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 Clouds, strong winds and breaking waves.
Processing technique **(Output)**	Image classification or feature detection or object based analysis (Vegetation type map and target features) Note: The ability to map specific targets will depend on their growth form and extent.	Image classification or feature detection (Vegetation type map and target features) Note: The ability to map specific targets will depend on their growth form and extent.
Resources – Hardware and Software	PC Image processing software GIS with image classification module (e.g. ARCGIS Image Analyst) , Object based analysis	PC Image processing software with Hyper-spectral analysis capabilities, including sub-pixel mapping techniques. , Object based analysis
Resource – Personnel	Trained in image classification Experience with Landsat	Trained in hyper-spectral data processing. Knowledge of area to be

	data Knowledge of area to be mapped When object based analysis then experience with object based analysis software (e.g. Ecognition)	mapped When object based analysis then experience with object based analysis software (e.g. Ecognition)
References: Note these are some example references	(Mishra et al., 2006; Phinn et al., in press)	Leiper in prep, (Mumby et al., 1997)

Leiper, I.A., S.R. Phinn, C.M. Roelfsema, and K.E. Joyce (in prep), “Mapping coral reef benthos and substrate types and bathymetry using hyperspectral airborne image data.” Remote Sensing of Environment.

Mishra, D., S. Narumalani, D. Rundquist and M. Lawson (2006). "Benthic habitat mapping in tropical marine environments using QuickBird multi-spectral data." Photogrammetric Engineering and Remote Sensing 72(9): 1037-1048.

Mumby, P. J., E. P. Green, A. J. Edwards and C. D. Clark (1997). "Mapping and measuremnet of tropical coastal environments with hyper-spectral and high spatial resolution data." International journal of remote sensing 18(2): 237 - 242.

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