

Table 7 The remotely sensed variable WATER QUALITY: SUSPENDED MATTER

and the listing of data types, processing requirements and costs for mapping and monitoring this variable using several suitable types of remotely sensed data. MMU: Minimum mapping unit; GRE: Ground resolution element

	DATA OPTION 1: MERIS	DATA OPTION 2: Lansat ETM
<i>Spatial Dimensions</i>		
Area to cover	Swath width 572km	185km x 185km per scene
Mapping unit	300m	15m panchromatic 30m multi-spectral
Positinal accuracy	Dependent on Georeferencing process	Depends on level of georeferencing
<i>Temporal Dimensions</i>		
When	1030 hrs	Approx 0945hrs
How often	Every 3 days	every 16 days
Variable to map	Chlorophyll A concentrations	Concentration of suspended organic and inorganic materials
Environmental Restrictions	Optically shallow areas Strong winds, breaking waves	Optically shallow water bodies
Processing technique (Output)	Image based deterministic (inversion of radiative transfer model). (Map showing suspended sediment concentration in mg/m ³ in each pixel)	Image modeling using empirical or process radiative transfer models.
Resources – Hardware and Software	PC Image processing software with Hyperspectral analysis capabilities, including sub-pixel mapping techniques.	PC Image processing software GIS with image classification module (e.g. Arc-View Image Analyst)
Resource – Personnel	Trained in hyperspectral data processing. Knowledge of area to be mapped	Trained in image modelling Experience with Landsat data Knowledge of area to be mapped
Estimated task and times	Image pre-processing (1 day) Image modeling (4 days per site)	Image pre-processing (1 day) Image classification or model required. Types (15 days per scene)

	<p>Field/Photo verification for a select number of sample sites: (4 days)</p> <p>Map output production: (2 days)</p> <p>Total = 11 days per site</p>	<p>Map output production: (2 days)</p> <p>Total = 18 days per scene</p>
<p>Estimated Cost</p> <p>Note that these are estimates are flexible</p>	<p>Data acquisition: Image data = no cost</p> <p>Processing = 11 days of technical officer @ \$875/day= \$9625</p> <p>Total = \$9625</p> <p>Note: This assumes software have been purchased</p>	<p>Data acquisition: Image data = \$1950</p> <p>Processing = 18 days of technical officer @ \$875/day= \$15750</p> <p>Total = \$17700</p> <p>Note: This assumes software have been purchased</p>