

**Table 8 The remotely sensed variable WATER QUALITY: CDOM**

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

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

|  |   |  |
|--|---|--|
|  | <p>Image modeling (4 days per site)</p> <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>Image classification or model required. Types (15 days per scene)</p> <p>Map output production: (2 days)</p> <p>Total = 18 days per scene</p>   |
| <p><b>Estimated Cost</b></p> <p>Note that these are estimates are flexible</p> | <p>Data acquisition:<br/>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:<br/>Image data = \$1950</p> <p>Processing = 18 days of technical officer @ \$875/day= \$17700</p> <p>Total = \$17700</p> <p>Note: This assumes software have been purchased</p> |