

Table 6 The remotely sensed variable WATER QUALITY: ALGALBLOOM

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

ALGAL BLOOMS	DATA OPTION 1: Landsat ETM	DATA OPTION 2: Airborne Hyperspectral
<i>Spatial Dimensions</i>		
Area to cover	185km x 185km per scene	Up to 1000km ²
Mapping unit	15m panchromatic 30m multi-spectral	0.5m – 5m
Positional accuracy	Dependent on georeferencing process	Dependent on georeferencing process
<i>Temporal Dimensions</i>		
When	Approx 9.45am	User defined
How often	every 16 days	User defined (can be < 1 day)
Variable to map	Algal boom presence and thickness.	Algal boom presence and thickness.
Environmental Restrictions	Strong winds, breaking waves	Strong winds, breaking waves
Processing technique (Output)	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.	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. Arc-View Image Analyst)	PC Image processing software with Hyperspectral analysis capabilities, including sub-pixel mapping techniques.
Resource – Personnel	Trained in image classification Experience with Landsat data Knowledge of area to be mapped	Trained in hyperspectral data processing. Knowledge of area to be mapped
Estimated task and times	Image pre-processing (1 day) Image classification to Benthic Types (15 days per scene) Field/Photo verification for a	Image pre-processing (1 day) Image mapping to Benthic Types (10 days per site)

	<p>select number of sample sites: (8 days)</p> <p>Map output production: (2 days)</p> <p>Total = 26 days per scene</p>	<p>Field/Photo verification for a select number of sample sites: (4 days)</p> <p>Map output production: (2 days)</p> <p>Total = 17 days per site</p>
<p>Estimated Cost</p> <p>Note that these are estimates are flexible</p>	<p>Data acquisition: Image data = \$1950 Aerial Photos (10) = \$90/frame to acquire or less to hire from Dept. of Natural Resources</p> <p>Processing = 28 days of technical officer @ \$875/day= \$24500</p> <p>Total = \$26450</p> <p>Note: This assumes software have been purchased</p>	<p>Data acquisition: Image data = \$20000</p> <p>Processing = 17 days of technical officer @ \$875/day= \$14875</p> <p>Total = \$34875</p> <p>Note: This assumes software have been purchased</p>