

## Technical Communication

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# An evaluation of a rapid visual technique for estimating seagrass biomass

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### ABSTRACT

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A visual census technique for estimating seagrass biomass has been adapted from a comparative pasture yield method. The above-ground biomass of seagrass within sampling quadrats was ranked with respect to a set of reference quadrats which were presumed to provide a scale of standing crop dry weights. At the end of each sampling period, sufficient quadrats were harvested to calibrate the scale. Using this method, monthly mean standing crops were estimated from May 1987 to April 1988 for a multispecific seagrass bed on Green Island, North Queensland. Values obtained ranged between 61.52 and 113.08 g dry weight  $m^{-2}$ . The precision ( $SE/\bar{x}$ ) of each monthly estimate ranged from 0.05 to 0.13, a satisfactory level for field programs. This method is more precise and time efficient, and is less destructive than some traditional harvesting methods.

### INTRODUCTION

Assessments of biomass, production, nutrient cycling and community dynamics all rely, to a degree, on estimates of macrophyte standing stock, which in turn are necessary for the assessment of habitat resources (Downing and Anderson, 1985). Given the costs of fieldwork, it is advantageous to be able to take measurements quickly and accurately. Measurement of the above-ground biomass of seagrass, which is usually estimated by quantitative harvesting of seagrass contained in randomly placed samplers (Downing and Anderson, 1985), is not only costly, but destructive.

Quantitative harvesting measures the biomass of each sample accurately (exactly). However, the limitation remains that each measurement represents only one sample from a very variable seagrass bed. The main problem lies in the variability in the set of measurements, rather than the accuracy with which an individual sample is measured. Consequently, many samples