

# Author's Accepted Manuscript

The use of unmanned aerial vehicle imagery in intertidal monitoring

Brenda Konar, Katrin Iken



[www.elsevier.com/locate/dsr2](http://www.elsevier.com/locate/dsr2)

PII: S0967-0645(16)30133-3  
DOI: <http://dx.doi.org/10.1016/j.dsr2.2017.04.010>  
Reference: DSR114231

To appear in: *Deep-Sea Research Part II*

Received date: 24 May 2016  
Revised date: 13 April 2017  
Accepted date: 15 April 2017

Cite this article as: Brenda Konar and Katrin Iken, The use of unmanned aerial vehicle imagery in intertidal monitoring, *Deep-Sea Research Part II* <http://dx.doi.org/10.1016/j.dsr2.2017.04.010>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## The use of unmanned aerial vehicle imagery in intertidal monitoring

Brenda Konar<sup>\*</sup>, Katrin Iken

University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, Fairbanks, AK 99775

<sup>\*</sup>Corresponding author. bhkonar@alaska.edu (B. Konar)

### Abstract

Intertidal monitoring projects are often limited in their practicality because traditional methods such as visual surveys or removal of biota are often limited in the spatial extent for which data can be collected. Here, we used imagery from a small unmanned aerial vehicle (sUAV) to test their potential use in rocky intertidal and intertidal seagrass surveys in the northern Gulf of Alaska. Images captured by the sUAV in the high, mid and low intertidal strata on a rocky beach and within a seagrass bed were compared to data derived concurrently from observer visual surveys and to images taken by observers on the ground. Observer visual data always resulted in the highest taxon richness, but when observer data were aggregated to the lower taxonomic resolution obtained by the sUAV images, overall community composition was mostly similar between the two methods. Ground camera images and sUAV images yielded mostly comparable community composition despite the typically higher taxonomic resolution obtained by the ground camera. We conclude that monitoring goals or research questions that can be answered on a relatively coarse taxonomic level can benefit from an sUAV-based approach because it allows much larger spatial coverage within the time constraints of a low tide interval than is possible by observers on the ground. We demonstrated this large-scale applicability by using sUAV images to develop maps that show the distribution patterns and patchiness of seagrass.

Keywords: Intertidal monitoring, Seagrass, Rocky, Unmanned Aerial Vehicle

### 1. Introduction

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات