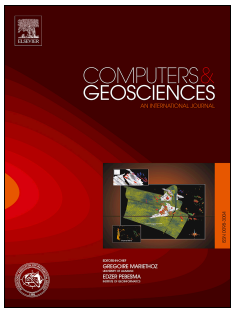
Accepted Manuscript



Estimating habitat volume of living resources using three-dimensional circulation and biogeochemical models

Katharine A. Smith, Zachary Schlag, Elizabeth W. North

PII: S0098-3004(17)30231-5

DOI: 10.1016/j.cageo.2018.04.005

Reference: CAGEO 4117

To appear in: *Computers and Geosciences*

Received Date: 7 March 2017

Revised Date: 1 April 2018

Accepted Date: 6 April 2018

Please cite this article as: Smith, K.A., Schlag, Z., North, E.W., Estimating habitat volume of living resources using three-dimensional circulation and biogeochemical models, *Computers and Geosciences* (2018), doi: 10.1016/j.cageo.2018.04.005.

Estimating habitat volume of living resources using three-dimensional circulation and biogeochemical models

Katharine A. Smith[a,1,*], Zachary Schlag[b], and Elizabeth W. North[c]

[a] University of Maryland Center for Environmental Science Horn Point Laboratory, P.O. Box 775, Cambridge, MD 21613, USA [email: kasmith6@hawaii.edu].

[b] University of Maryland Center for Environmental Science Horn Point Laboratory, P.O. Box 775, Cambridge, MD 21613, USA [email: zachary.schlag@gmail.com].

[c] University of Maryland Center for Environmental Science Horn Point Laboratory, P.O. Box 775, Cambridge, MD 21613, USA [email: enorth@umces.edu].

[1] Current address: University of Hawai'i at Mānoa, 1000 Pope Rd., Honolulu, HI 96822, USA

* Corresponding author: Katharine A. Smith, kasmith6@hawaii.edu

Authorship statements:

K. Smith developed and tested the three different methods for calculating a grid cell volume, helped plan the implementation of the chosen method for estimating habitat volumes, and wrote the bulk of the manuscript.

Z. Schlag implemented the volume algorithm to create a model that evaluates the full habitat volume in a hydrodynamic model and added details to the manuscript.

E. North was a co-PI on the grant that supported this research, and proposed and conceptualized the idea for a model calculating habitat volumes in biogeochemical hydrodynamic models, aided in the planning and testing of this model, and contributed considerably to the manuscript writing.