

PhD Dissertation
Department of Environmental Science and Policy
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Title: An Individual-Based Model of Basking Sharks as a Case Study of Model Communication for Policy

Dissertation Co-Directors: Dr. Cynthia Smith, Dr. Erin Peters-Burton

Committee: Dr. Chris Parsons, Dr. Dale Rothman

ABSTRACT

This interdisciplinary dissertation combined complex behavioral modeling and qualitative social science to address marine conservation issues: (1) the first individual-based model (IBM) of basking shark behavior was developed and used to determine the localized drivers of aggregations in Ireland; (2) marine IBMs were reviewed to determine the rate of IBM use in policy; and (3) the basking shark IBM was used as a case study for communication with mid-level policymakers. The results of these studies supported the usefulness of IBMs for elusive megafauna and provide guidance for researchers who wish to communicate scientific results for policy purposes.