

Vita

Candidate's name: Mark Alan Baran

Universities
Attended: Cornell University (2011)
Bachelors of Science

University of New Brunswick (2019)
Masters of Science
Biology

Conference Presentations:

Baran, Mark A., A. W. Diamond, S. W. Kress, and P. Shannon. Overwinter Movement of Atlantic Puffins (*Fratercula arctica*) in the Gulf of Maine: Inter- and Intra-Colony Effects. Presented at Society of Canadian Ornithologists meeting, August 2019, Quebec City, QC.

Baran, Mark A. Overwinter Movement of Atlantic Puffins Breeding in the Gulf of Maine. Presented at Gulf of Maine Seabird Working Group meeting, August 2019, Bremen, ME, USA.

Baran, Mark A. Overwinter Movement of Atlantic Puffins (and Other Alcids) Breeding on Machias Seal Island. Presented at Gulf of Maine Seabird Working Group meeting, March 2019, Bangor, ME, USA.

Baran, Mark A. Overwinter Movements of Atlantic Puffins (*Fratercula arctica*) Breeding on Machias Seal Island and Effects of Subcolony Distribution on Nonbreeding Movements. Presented at the Gulf of Maine Seabird Working Group meeting, March 2018, Bangor, ME USA; Atlantic Canada Seabird Working Group meeting, February 2018, Sackville, NB.

Overwinter Movement of Atlantic Puffins (*Fratercula arctica*) Breeding in the Gulf of Maine

UNIVERSITY OF NEW BRUNSWICK

THESIS DEFENCE AND EXAMINATION

in Partial Fulfillment

of the Requirement for the Degree of
Master of Science

by

Mark A. Baran

in the Department of Biology

U.N.B., Fredericton, N.B.

Monday, November 25th, 2019

11:30 a.m.

Bailey Hall, Room 27

Examining Committee

Drs. Tony Diamond & Heather Major

Dr. Brian Hayden

Dr. Amy-Lee Kouwenberg

Dr. Les Cwynar

Co-Supervisors

Internal Examiner

External Examiner

Chair of Oral Examination

Abstract

Atlantic Puffins (*Fratercula arctica*) are pelagic seabirds that breed on offshore islands throughout the North Atlantic. Following the breeding season, puffins spend the non-breeding months at sea and there is a knowledge gap regarding the factors affecting populations away from the colony. I used geolocators to determine the nonbreeding locations of North American puffins breeding on three islands in the Gulf of Maine, examining differences between colonies and within the largest colony. I also examined using stable isotopes in claw tissue to determine general overwinter position.

Puffins breeding in the Gulf of Maine typically remain in the Gulf of Maine before moving south in the late winter, though some visit waters around Newfoundland during the autumn. Movement patterns appear to be similar among birds within and between colonies. Attempts to use stable isotope analysis of claw tissue to determine overwinter location were inhibited by the similarity of routes among sampled birds.