

Vita

Candidate's name: Cody Michael Brooks

Universities
Attended: University of New Brunswick (2017)
Bachelors of Science

University of New Brunswick (2020)
Masters of Science
Biology

Publications / Conference Presentations:

Saunders, G.W., Brooks, C.M. & Scott, S. 2019. Preliminary DNA barcode report on the marine red algae (Rhodophyta) from the British Overseas Territory of Tristan da Cunha. *Cryptogamie Algol.* 40(10): 105-117.

Acadian Entomological Society & Entomological Society of Canada Canadian Society for Ecology and Evolution Joint Meeting, Fredericton, NB. 2019. The Kelp Conveyor Hypothesis: evidence of long-distance migration in the Northeast Pacific. Brooks C., Saunders G.W. (oral)

58th Northeast Algal Symposium, Salem, MA. 2019. The Kelp Conveyor Hypothesis: Long Distance Gene Flow in the Northeast Pacific. Brooks C., Saunders G.W. (oral)

Phycological Society of America, Vancouver, BC. 2018. The Kelp Conveyor Hypothesis: Exploring Long-Distance Genetic Connectivity of Red Algae in the Northeast Pacific. Brooks C., Saunders G.W. (oral)

57th Northeast Algal Symposium, New Haven, CT. 2018. The Kelp Conveyor Hypothesis: Exploring Long Distance Genetic Connectivity of Red Algae in the Northeast. Brooks C., Saunders G.W. (oral).

55th Northeast Algal Symposium, Westfield, MA. 2016. Long-Distance Kelp Rafting of Red Algae in the Northeast Pacific. Brooks C., Saunders G.W. (oral).

Population-level Impacts of the Kelp Conveyor Hypothesis

UNIVERSITY OF NEW BRUNSWICK

THESIS DEFENCE AND EXAMINATION

in Partial Fulfillment

of the Requirement for the Degree of
Master of Science

by

Cody Michael Brooks

in the Department of Biology

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

Thursday, June 18th, 2020

11:00 a.m.

Via TEAMS

Examining Committee

Dr. Gary Saunders
Dr. Adrian Reyes-Prieto
Dr. Graham Forbes
Dr. Les Cwynar

Supervisor
Internal Examiner
External Examiner
Chair of Oral Examination

Abstract

Endemic species of Haida Gwaii are commonly attributed to populations persisting over long periods of time in glacial refugia; however, kelp rafting has been recently proposed as an alternative hypothesis to explain the disjunct marine species previously considered endemic to Haida Gwaii. Using mtDNA from five predominantly subtidal species and three predominantly intertidal species of red algae, this study tested the hypothesis that disjunct distributions between Haida Gwaii and California are caused by kelp rafting of non-buoyant species. In support of this hypothesis, genetic connectivity of populations in California and Haida Gwaii was greater in subtidal species than intertidal species and allele frequencies suggest colonization of Haida Gwaii from California. While patterns consistent with kelp rafting were strong in subtidal species, unique Haida Gwaii alleles in both subtidal and intertidal species indicate a long residence time for some populations, suggesting

glacial refugia and kelp rafting may be jointly responsible for the disjunct distributions observed on this coast.