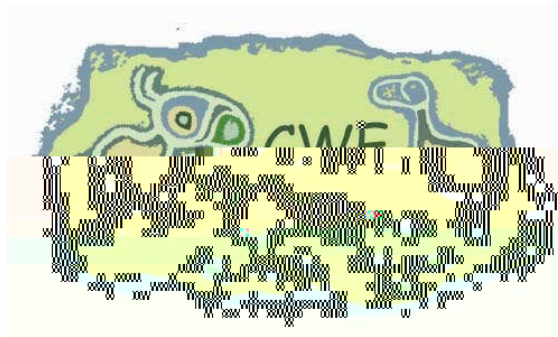


**ANNUAL REPORT of the
CENTRE FOR WILDLIFE ECOLOGY
2017-2018**



**Department of Biological Sciences
Simon Fraser University**

<http://www.sfu.ca/biology/wildberg/NewCWEPPage/CWEnewTestHome.htm>

Dr. Ronald C. Ydenberg, Director

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B. Steering Committee

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IV. INTRODUCTION

The aim of this Annual Report is to give an overview of our activities, outline the progress on new and continuing projects, describe the personnel involved, and to give some indication of our

pAbCEuDTc.iEBIFLFG(Endangered, IUCN)

The CWE is lending its expertise in shorebird biology to support a conservation project on the highly endangered Tuamotu Sandpiper, in partnership with the USF&WS (Rick Lanctot, Alaska region), Island Conservation, the French Polynesian Regional Division for the Environment (DIREN), a local ornithological NGO (the Society of Polynesian Ornithologists, SOP-MANU), and the Critical Ecosystems Partnership Fund (CEPF), administered by Conservation International.

Once widespread across the South Pacific, this species is now found on only 4 atolls, with a world population of ca. 1400 individuals. PhD student Marie-Hélène Burle has spent >16 months over 4 field seasons conducting the first study of the species' basic biology. Her information on habitat usage, diet, and social behaviour is being used to support reintroduction planning for the species onto atolls where rats have been or will be removed, in addition to documenting fascinating novel adaptations by an arctic bird to a tropical environment.

uANDeDobeNWE(Plc)al Concern, COSEWIC) - see Section V.D.1, Coastal Studies of Seabirds.

9A3EPB.inEHHD(Threatened, COSEWIC) - see Section V.B.3.b., Landscape-level determinants of breeding distribution, productivity and foraging in Barn Swallows and Tree Swallows

B. Human Impacts on Birds

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a. Developmental neurotoxicity of mercury in birds

Cybele Heddle (MET student) completed the final phase of this project (year 5) with experimental work looking at the combined effect of in ovo and chick dosing. She also conducted two collaborative projects with researchers at McGill. A final report was submitted to ECCC and two papers are in progress. Two other papers were published from earlier phases of this work (Morran et al. OLCMCVTLCCGYF al. JRnRGcd.RBMA(FCGCF)

b. Chronic toxicity of petroleum hydrocarbons and other contaminants in seabird sentinel species

We initiated a new project with Drs. John Elliott (ECCC) and collaborators at the National Wildlife Research Centre (NWRC) laboratory in Ottawa as part of the Ocean Protection Plan.

studies examining the exposure and impact of persistent organic pollutants (POPs) on wildlife. Kate Fremlin, who will be completing her MSc spring/summer 2018, found that the majority of legacy POPs observed in the tissues of Cooper's hawk in previous studies are in fact biomagnifying in the terrestrial food-web of the Cooper's hawk. In addition, many emergent POPs, such as perfluorinated compounds, are also biomagnifying in this terrestrial food-web. The extent of biomagnification seen in this terrestrial system

C.

changes in the ability of parents to meet the challenge of provisioning experimentally enlarged brood sizes. In 2017, Catherine Villeneuve, repeated a brood manipulation on tree swallows in Creston BC that was previously conducted in 1994/5. Preliminary analyses suggest that although the rate of nest visits has not changed over the last two decades, the amount of prey delivered per visit has decreased. Catherine is repeating this experiment in 2018 to strengthen conclusions that can be made about the utility of re-purposing brood manipulation experiments to evaluate changes in prey availability on the breeding grounds.

See also section V.B.3.b. Landscape-level determinants of breeding distribution, productivity and foraging in Barn Swallows and Tree Swallows.

See also section V.A.2. Eastern WhipPoorWillEhigrRAMRBRaoEPyKOsvPWI

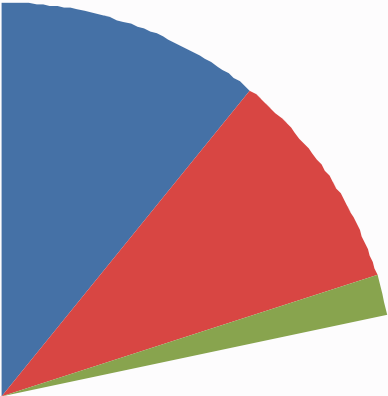
D. Coastal Ecology

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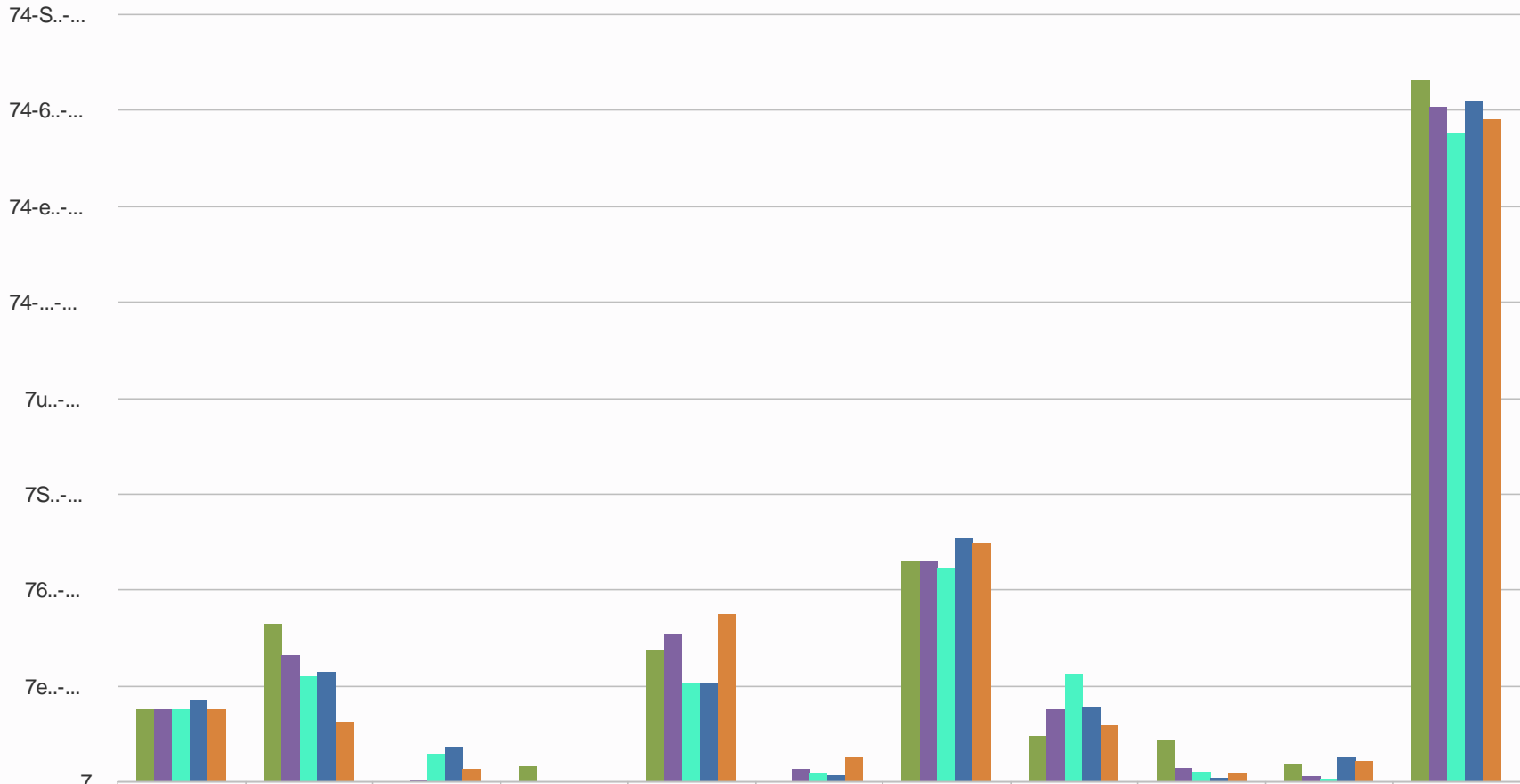
Coastal British Columbia supports large populations of many species of seabirds, for which Environment and Climate Change Canada has an important stewardship responsibility. The Triangle Island Seabird Research and Monitoring Station was established in 1994 as a centre for research devoted to understanding seabird ecology, aimed particularly at identifying and understanding environmental and demographic causes of population change so as to recommend appropriate conservation actions. The Anne Vallée Ecological Reserve on Triangle Island supports the largest and most diverse seabird colony in British Columbia, including the world's largest population of Cassin's Auklets, BC's largest populations of Tufted Puffins and Common Murres, and a large population of Rhinoceros Auklets, among others. As part of the Scott Island Group, Triangle Island is recognized as an Important Bird Area (IBA). Moreover, waters around the Scott Islands are being developed as a Marine Wildlife Area (MWA) under the Canada Wildlife Act, to protect critical habitat for the millions of seabirds that depend on these waters throughout the year.

Our ongoing investigations examine breeding propensity and chronology, reproductive performance, nestling diet and development, parental foraging and provisioning behaviour, among other topics. Of particular interest is the issue of how climate-induced fluctuations in the timing and availability of marine prey populations affect seabird reproduction and survival.

The 2017 season. Summer 2017 marked the 24th year of operation of the Centre for Wildlife Ecology's seabird research and monitoring program on Triangle Island. The camp was opened in late April in 2017 and the field crew consisted of **Étienne Boucher** (ECCC Volunteer, Delta) **Glenn Crossin** (Professor, Dalhousie University, Halifax), **Alice Domalik** (MSc Candidate, Simon Fraser University, Burnaby), **Ana Gonzalez** (University of Saskatchewan, Saskatoon), **Sarah Hudson** (ECCC, Delta – WRD), **Kevin Kardynal** (ECCC, Saskatoon – Wildlife Research Division), **Mark Maftai** (ECCC, Delta – WRD), and **Ken Wright** (ECCC, Delta – WRD), in addition to Hipfner. As in past years, the Triangle Island crew monitored breeding chronology, breeding success and diet in Cassin's Auklet SMFLgCrA.dgeHEAGReMhInoHe Rhinoceros Auklet PRrCrgTBLAE.CBCLrAmB Black Oystercatcher fAR.CMCdTeHEtALgAT They also deployed satellite tags on Glaucous-winged Gulls cAreHEYGAeLRHLRBH



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