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W - CF UC GFYKP B

- Christopher Latty, MS Wildlife (Powell and Hollmen)
- Steffen Oppel, PhD Biology (Powell)
- Theresa Tanner, MS Fisheries (Margraf)
- Brad Wendling, MS Wildlife (Griffith)

V W 6R RE R CN U

- McKie Campbell–Commissioner, Alaska Department of Fish andA

global consequences. British Ecological Society Annual Meeting, London, England. Invited.

Dickson, L., S. Oppel, G. Raven, A. Powell, and T. Bowman. November 2008. Importance of eastern Chukchi Sea and southeastern Beaufort Sea as spring staging areas for king and common eiders. 3rd North American Sea Duck Conference, Quebec City, Canada.

Euskirchen, E. S., A. D. McGuire, T. S. Rupp, F. S. Chapin III, M. Oleson, J. S. Cle

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Julius, S. H., J. M. West, J. S. Baron, B. Griffith, L. A. Joyce, B. D. Keller, M. A. Palmer, C. H. Peterson, and J. M. Scott. 2008. Annex A: Case Studies. Pages A-1 to A-170 in: Preliminary review of adaptation options for climate-sensitive ecosystems and resources. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research [S. H. Julius and J. M. West (eds.), J. S. Baron, B. Griffith, L. A. Joyce, P. Kareiva, B. D. Keller, M. A. Palmer, C. H. Peterson, and J.M. Scott (authors)]. U.S. Environmental Protection Agency, Washington, DC.

Julius, S. H., J. M. West, J. S. Baron, B. Griffith, L. A. Joyce, B. D. Keller, M. A. Palmer, C. H. Peterson, and J. M. Scott. 2008. Annex B: Confidence Estimates for SAP

9GWZJPVECN6 DNECYKVP RH, GFG CN&U CHH

Powell, A. N. and S. A. Backensto. 2008. Productivity and locations of Common Ravens ( ) nesting on Alaska's North Slope. Final Report, U.S. Geological Survey, Alaska Cooperative Fish and Wildlife Research Unit, Fairbanks, AK. 32 pp.

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distribution (2 or 3 years) was estimated for each sex using logistic regression using a major tributary as a reference spawning location. Marine age distribution significantly differed across spawning locations for both sexes. Among females, most spawning locations were more likely to be comprised of younger fish (marine age 2) as compared to the major tributary. Among males, only one spawning location was more likely to be comprised of younger f0n s

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and consumed at the base of stream foodwebs relates to environmental variation and aquatic macroinvertebrates, an important food source for fish. The goals of this work are to answer the following questions: (1) how are changes in light intensity, nutrient concentration, and stream flow related to changes in ecosystem metabolism (primary production and community respiration) in the Ch

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growth of juvenile Chinook salmon, (4) test whether the growth model can be used to predict annual growth and annual variation in smol

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V W VW8 WFGP Y/P G KICR Christopher Latty, MS Biology
V V R F KR Abby Powell and Tuula Hollmen
,VPFKPY IGPEKG Alaska Science Center/USGS; Alaska SeaLife Center; Fairbanks Field Office/USFWS
WP 1KPF 8 SSRY Alaska SeaLife Center

Christopher Latty graduated from the University of Alaska Fairbanks in May 2008. His thesis abstract follows:

Implanted transmitters have been used for over a decade to track the migrations and habitat use of many sea duck spec( ) Tj 41 0 0 4 (i) Tj (i) Tj 41 0 0 41 832 0 Tm (e) Tj 41 0 0 41

the regional geographical range of female Dall's sheep in the Yukon-Tanana uplands, 2) study areas (defined as the distribution of sheep within a localized area), and 3) selection within individual 2-week home ranges. Sheep home range size, movement rates, habitat use and selection ratios a

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W NKO C G JCPIG

V W VW8 WFGP Y/P G KICR Nathan Coutsoubos, PhD Biology
V F KR Falk Huettmann
, PFKPY IGPEd BLM (RWO 155); USFWS; NSF; UAF IGERT
/P 1KPF 8 SSR Y

observers, and post-fox control. Incubation constancy was slightly higher at Kuparuk than at Teshekpuk, and females appeared to be primarily reliant on endogenous reserves to maintain high nest attendance rates, but did feed during incubation. The NPR-A is the center of the breeding distribution and the area of greatest nest density of King Eiders in Alaska and is being leased for development, so it is important to have information on the reproductive parameters of King Eiders in both an undisturbed and a disturbed area.

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V W VW8 WFGPY/P G KICa Valerie Steen, MS Wildlife
V F KR Abby Powell
, PFKPYI IGPEd Region 6/USFWS (RWO 156)
WP 1KPF 8 SSRY Personnel provided by USFWS

Black Terns are a species of concern due to habitat loss on the breeding grounds and population declines. They nest on floating mats in freshwater wetlands and forage in a

Native Alaskans. If gull population growth results from continuing oil development on the North Sl

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samples from captured birds. This project is in the beginning stages of development as we prepare for our first field season in fall 2009. During a pilot study (fall 2008) we found differences in invertebrate species diversity between mudflats. Also, shorebirds seemed to concentrate in areas of higher invertebrate abundance. Several shorebird populations using this habitat are declining, and some are li

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VV V OK WRP CPF 2RPI G GV8RKN C DRPU8 R CIGU

VW W 6VR FRE R CNZJG GC EJGU Shuhua Yi
W , CE Nd A. David McGuire
, PFKPY IGPEd NASA through the University of Maryland

One of the greatest uncertainties in modeling carbon cycling in boreal forests is the level of surface fuel consumption (SFC) that occurs during fires. The deep ground-layer of organic matter present in many boreal forests (consisting of litter, lichen, mosses, dead woody debris and organic soil) frequently burns during fire. The amount of carbon released directly to the atmosphere from SFC ranges between 5 and > 60 t C ha^{-1}. The spatial and temporal factors controlling variations in SFC require additional research. Researchers at the University of Maryland and Michigan State University have conducted field studies to evaluate the roleof landscape charact g

dynamics of carbon in high latitudes, this project will comprehensively analyze the carbon cycle of the arctic system, guided by the following two general questions: (1) What are the geographic patterns of fluxes of carbon dioxide and methane over the Pan-Arctic region and how is the balance changing over time; and (2) What processes control the sources and sinks of carbon dioxide and methane over the Pan-Arctic region and how do the controls change with time? To address these general questions, the project is integrating data on carbon dioxide and methane dynamics of the Arctic System using a combination of prognostic and inverse approaches to provide an integrative approach to estimating and understanding the exchanges of carbon dioxide and methane from terrestrial and marine components of the system. This

vegetation cover. In the second follow-up study ( ), we developed a new version of the Terrestrial Ecosystem Model (TEM, version 7.0) to include a dynamic vegetation component with competition among plant functional

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ADFG Alaska Department of Fish and Game
AKCFWRU Alaska Cooperative Fish and Wildlife Research Unit
BLM Bureau of Land Management
CMI Coastal Marine Institute, UAF
DBW Department of Biology and Wildlife, UAF
DOE Department of Energy
GIS Geographical Information System
IAB Institute of Arctic Biology, UAF
IMS Institute of Marine Science, UAF
MMS Minerals Management Service
NASA National Aeronautics and Space Administration
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