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Not for Publication: Because this report is one of progress, the data presented are often incomplete, and the conclusions reached may not be final. Consequently, permission to publish any of the information herein is withheld pending approval from the Alaska Cooperative Fish and Wildlife Research Unit.



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Synthesis of Arctic System Carbon Cycle Research Through Model-Data Fusion

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- Brian Barnes–Dire







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atmospheric carbon dioxide, climate, and land use. Fall Meeting of the American Geophysical Union, San Francisco, CA. Invited.

Medhurst, R. B., M. S. Wipfli, C. A. Binckley, J. Y. Kill, and K. P. Polivka. June 2007. Differences in headwater stream invertebrate communities across logging and climatic gradients in the Cascade Range, Washington. Annual Meeting of the North A

Yi, S.,

- Phillips, L. M., A. N. Powell, E. J. Taylor, and E. A. Rexstad. 2007. Use of the Beaufort Sea by king eiders breeding on the North Slope of Alaska. *Journal of Wildlife Management* 71(6): 1892-1898.
- Rupp, T. S., X. Chen, M. Olson, and A. D. McGuire. 2007. Sensitivity of simulated boreal fire dynamics to uncertainties in climate drivers. *Earth Interactions* 11, Paper 3. 21 pp.
- Sitch, S., A. D. McGuire, J. Kimball, N. Gedney, J. Gamon, R. Engstrom, A. Wolf, Q. Zhuang, J. S.

- Beier, Colin M. 2007. Regional climate, federal land management, and the social-ecological resilience of southeastern Alaska. PhD Thesis, University of Alaska Fairbanks. 227 pp.
- French, H. Blair. 2007. Effects of bear viewers and photographers on brown bears (*Ursus arctos*) at Hallo Bay, Katmai National Park and Preserve, Alaska. MS Thesis, University of Alaska Fairbanks. 73 pp.
- Gregovich, Dave. 2007. Landscape modeling of threespine stickleback occurrence in small southeast Alaska lakes. MS Thesis, University of Alaska Fairbanks. 109 pp.
- Martin, Aaron. 2007. The effects of stream habitat (wood) on stream invertebrates of wood and salmon analog additions. MS Thesis, University of Alaska Fairbanks. 54 pp.
- Martin, Kate H. 2007. Breeding ecology and fasting tolerance of scaup and other ducks in the boreal forest of Alaska. MS Thesis, University of Alaska Fairbanks. 102 pp.
- Medhurst, Robert B. 2007. Headwater stream invertebrate communities: A comparison across ecoregions and logging histories. MS Thesis, University of Alaska Fairbanks. 94 pp.
- Meixell, Brandt W. 2007. Population dynamics of tundra swans on the lower Alaska Peninsula. MS Thesis, University of Alaska Fairbanks. 95 pp.
- Oehlers, Susan. 2007. Habitat use of fish

Reports are listed as Completed or Ongoing, in the categories of Aquatic, Terrestrial, or Ecological Studies. The List of Abbreviations appears on the final page of the report.

bundle and salmon analog additions were measured in the year following creation of off-channel, fish habitat in southcent



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Jeff Perschbacher, MS Fisheries  
F. Joseph Margraf  
Sport Fish Division/ADFG, Region 2 (RSA)  
Vehicle, technical assistance, and equipment provide

subsistence users throughout the Pacifi

David Esse, MS Fisheries  
F. Joseph Margraf



underst





Meagan Boltwood Krupa, MS Environmental Science  
Mark Wipfli and F. Stuart Chapin  
NSF IGERT Fellowship

Managers and decision makers are individually struggling to manage Anchorage's  
freshwater fisheries as the effect

Annual R

Heather Wilson, PhD Biol

Kate Martin, MS Wildlife  
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Yukon Flats National Wildlife Refuge (RWO 142)

*Note:* Kate Martin graduated from the University of Alaska Fairbanks in August 2007.  
Her thesis abstract follows:

Information on the



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on survey routes from the 19









needs. Lack of information about Sitka black-tailed deer (*Odocoileus hemionus sitkensis*) populations





energetics, and behavior of Alaskan porcupines in winter. Foraging



forest ecosystem models may not adequately account for these





A. David McGuire  
NSF

Daniel Hayes

vegetation component with competition among plant functional types for nitrogen and light. We performed model simulations for the years 2002–2100 under nine future climate scenarios for a region in northern Alaska extending from the ecotonal boreal forest to the Arctic Ocean. Our analysis indicates that the net primary p

than the



is currently being validated using data from two black spr

ADFG	Alaska Department of Fish and Game
AKCFWRU	Alaska Cooperative Fish and Wildlife Research Unit
ARCUS	Arctic Research Consortium of the United States
BLM	Bureau of Land Management
CMI	Coastal Marine Institute, UAF
DBW	Department of Biology and Wildlife, UAF
DOE	Department of Energy
EVOS	Exxon-Valdez Oil Spill
GIS	Geographical Information System
GPS	Global Positioning System
IAB	Institute of Arctic Biology, UAF
IMS	Institute of Marine Science, UAF
MMS	Minerals Management Service
NASA	National Aeronautics and Space Administration
NPR-A	National Petroleum Reserve-Alaska
NPS	National Park Service
NSB	North Slope Borough
NSF	National Science Foundation
NWR	National Wildlife Refuge
PI	Principal Investigator
RSA	Reimbursable Services Agreement
RWO	Research Work Order
SFOS	School of Fisheries and Ocean Sciences, UAF
SSP	Science Support Program
UAF	University of Alaska Fairbanks
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
BRD	Biological Resources Discipline