College of Natural Science and Mathematics

B.S., Wildlife Biology.

B.S., Biological Sciences

B.S., Biological Sciences

B.A., Biological Ses

, B.S., Biological Sciences

B.A., Biological Sciences

, B.S., Biological Sciences.

, B.A., Biological Sciences

B.S., Geology

B.S., Computer Science

B.A., Geoscience

M.S., Geology.

M.S., Biology.

M.S., Statistics.

M.S., Computer Science.

M.S., Biology.

M.S., Atmospheric Sciences.

M.S., Geology.

M.S., Geophysics: Solid-Earth Geophysics.

M.S., Statistics.

M.A., Chemistry.

M.S., Atmospheric Sciences.

M.S., Geology.

M.S., Wildlife Biology.

M.S., Neuroscience Visualization: Interdisciplinary Program.

M.S., Statistics.   .

M.S., Geology.

M.S., Atmospheric Sciences.

M.S., Statistics.

M.S., Biology.

M.S., Statistics.

M.S., Geology: Volcanology.

M.S., Biology.

M.S., Geology.

M.S., Biology.

M.S., Biology.

M.S., Biology.

M.S., Geology: General Geology.

M.S., Environmental Chemistry.

Southeast Alaska's ecosystems and social systems are shaped largely by regional climate and resource management on public lands (Tongass National Forest); both factors have experienced strong drivers of change during the twentieth century. My research draws from several disciplines to examine outcomes of contemporary social and ecological change in Southeast Alaska.

The present research demonstrates that perchlorate, a widespread but unregulated contaminant in the United States, is harmful at environmentally relevant concentrations. Using the threespine stickleback (   ) as a model, perchlorate was shown to impair growth, swimming performance, somatic and reproductive development, fecundity, reproductive behavior, survivorship and fitness.

This work characterized the infrasonic noise field at two arrays operated by UAF. The estimated noise field was not the assumed white, uncorrelated noise field. The effects of the noise field on the estimation of azimuth and trace velocity were determined and compared to the estimates with standard noise assumptions.

linear behaviors of the impacts of land-cover changes under different CO_2 concentrations.

The first comprehensive estimates of the net mass balances of the Bering and Malaspina glacier systems, the effects of glacier dynamics on their accumulation areas, their combined contribution to global sea-level rise from 1972 to 2003 and the wastage of the tidewater glaciers at Icy Bay are presented in this dissertation.

A data assimilation technique to find soil properties by exploiting measured soil temperatures is presented. The recovered properties are used to model differential frost heave within non-sorted circles in the Alaskan tundra. Finally, in order to simulate permafrost dynamics on the global scale, several improvements to Global Circulation Models are suggested.

The subtropical Upper Cretaceous Matanuska paleoflora, frequently disturbed by volcanic events, was a northern continental margin flora that flourished along a dispersal corridor between Russia and western North America. The Lower Cantwell flora represents a drier paleoecosystem, while the arctic coastal Prince Creek flora lived in a cool, dry region.

Solar flares primarily enhance the soft X-ray irradiance between 1 - 2 nanometers and deposit most of their energy between 100 - 110 kilometers where peak nitric oxide production occurs. Large flares can double the 0.1 - 2- and 0.1 - 7-nanometer daily integrated energy to the thermosphere, thus doubling the nitric oxide column density.

This dissertation explored the effects of ecological and social components on Alaskan moose population dynamics and genetics. With these two components, I explored catch-per-unit effort, antler size and population structure. I concluded that inclusion of ecological and social features greatly improves population dynamics and structure knowledge for moose in Alaska.

Daily rhythms of northern red-