# Report looks at impact of new energy development and exploration on wildlife

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(Phys.org)—New technology, a desire to produce domestic energy, and concerns over climate change have spurred a rapid increase in oil and natural gas, bioenergy, wind, solar and geothermal energy production. These developments are putting novel pressures on terrestrial ecosystems, but the impacts to wildlife have largely been overlooked.

A new report by Joseph Northrup and George Wittemyer of Colorado State University's Warner College of Natural Resources bridges this divide by summarizing current knowledge on energy production's impacts on wildlife and related mitigation strategies. The paper also highlights gaps in scientists' understanding of the repercussions of these rapid and novel ecosystem alterations, and calls for increased research to address these knowledge gaps.

The report, "Characterizing the impacts of emerging energy development on wildlife, with an eye towards mitigation," will be published this fall in Ecology Letters, the leading peer-reviewed ecology journal. The article will be available online today at www.EcologyLetters.com.

The paper's analysis demonstrates that impacts of energy production are typically species- and system-specific, highlighting the importance of developing customized investigations on energy production effects and predevelopment assessments to avoid ecologically sensitive site locations. Commonly reported mitigation measures outlined in the paper include reducing the footprint of and human activity at the development

site, maintenance of undisturbed habitat and cessation of projects during sensitive periods for wildlife, such as migration or nesting periods.

"Energy related development is one of the primary drivers of landscape change," Northrup said. "To maintain the integrity of impacted systems, it is critical that we work to minimize the impacts that this land use change is eliciting on a massive scale."

Wittemyer and Northrup both work in the Department of Fish, Wildlife and Conservation Biology at CSU's Warner College of Natural Resources. Wittemyer is an assistant professor of wildlife biology and has been conducting pioneering work on the application of ecological research to the management and protection of endangered mammals and their ecosystems. Northrup is a PhD candidate studying the behavioral response of mule deer to natural gas development in the Piceance basin in Northwestern Colorado.

"Unconventional and alternative energy development has become increasingly common throughout the world in the last ten years," Wittemyer said. "Our paper proposes more rigorous and collaborative efforts that include researchers, regulators and industry working in conjunction to better understand and mitigate this major driver of global land use change."

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