



WiSE Wednesday Lecture Series Presents:

When Renewable Energy and Wildlife Conservation Conflict: Recent Research on Golden Eagles in the Southern Great Plains

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ABSTRACT:

The golden eagle (*Aquila chrysaetos*) is a large, apex predatory bird that typically occurs at low densities, has a long-life span, experiences delayed maturity and low reproductive rates, and has no natural predators. Thus, mortality caused by anthropogenic sources may have population-level effects on the species. Golden eagles have proven to be particularly vulnerable to turbine strikes. Like other non-game birds, they are protected by the Migratory Bird Treaty Act, and receive additional protections from the Bald and Golden Eagle Protection Act (1962), including explicit penalties for illegal take or disturbance. The latter law and subsequent published regulations empower the U.S. Fish and Wildlife Service (USFWS) to permit accidental or intentional lethal take of golden eagles provided there is no net-loss to golden eagle populations. Facing large fines for the death of each eagle killed by wind turbines, the wind energy industry has simultaneously pursued means of decreasing golden eagle mortality at their facilities, and the take permits that would protect them from fines when mortality inevitably occurs. However, issuance of permits is hampered by a lack of quantitative information to guide survey methods that optimize detection and support occupancy modeling specific to different landscapes and seasons. These data are crucial for developing defensible protocols for pre-construction assessment of eagle fatality risk and post-construction monitoring. During 2004-2005, four golden eagle carcasses were found within 50 m of wind turbine towers at a newly constructed, 136 (1.5-megawatt) wind energy facility along the western face of the Caprock Escarpment in east-central New Mexico. Necropsies confirmed that the cause of all mortalities was blunt force trauma, logically from collision with turbine blades. Unfortunately, no quantitative data existed for eagle presence, densities, or landscape use during the breeding season, migration, or the winter periods in the southern Great Plains, a region undergoing rapid wind energy development. Here at Texas Tech University, we have initiated research to begin addressing these issues and identifying means to mitigate eagle mortality.

BIOGRAPHY:

Dr. Clint W. Boal (below left) is the Assistant Unit Leader of the US Geological Survey Texas Cooperative Fish and Wildlife Research Unit with a joint position as Professor of Wildlife Ecology at Texas Tech University since 2000. He received his PhD (1997) from the University of Arizona, and was a post-doctoral fellow at the University of Minnesota (1998 – 2000). His research is directed at addressing contemporary research and information needs of wildlife management agencies. Within this context, much of his research has focused on birds of prey, with the majority of over 100 journal papers and book chapters addressing aspects of raptor ecology and conservation. He has served as President and as a Board Member for The Raptor Research Foundation, an international professional society with membership from over 40 countries. He is the recipient of the Bernie E. Rushing, Jr., Outstanding Researcher Award from Texas Tech University and the Outstanding Faculty Research Award from the College of Agriculture Science and Natural Resources at Texas Tech University.