

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Predict Condor Range Expansion to Reduce Development Threats

Discipline: Natural
Type of Project: Technical Assistance/Research
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Student Participation: Yes, Graduate Student
Effective Dates: 09/25/2016 - 06/01/2019
Funding Amount: \$95,763.49

Investigators and Agency Representative:

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Project Abstract: The California condor (*Gymnogyps californianus*) narrowly escaped extinction in the early 1980s when its population hit a low of just 22 individuals. To save the species from extinction, all remaining wild birds were brought into zoos for captive breeding programs. The success of those programs was followed by the release of captive-reared condors into the wild, starting in the mid-1990s, from five release sites located in Arizona, Baja-Mexico, and California. In 2003, PINN was selected as the third CA release site after US Fish and Wildlife Service (USFWS) and Ventana Wildlife Society (VWS) were already releasing condors from Santa Barbara County and Big Sur respectively. Today there are >240 individuals in the wild with approximately 150 of those in California. Condors released from Pinnacles National Park (PINN) not only contribute to the central CA flock, but to over-arching condor recovery goals.

Since VWS- and PINN-released birds first began flying together in 2005, there have been two seemingly distinct condor flocks in CA. The southern and central California flocks have been separately by thousands of square miles. Flights of individuals from one flock to another were extremely rare. However, condor movements in 2015 indicate that the flocks are poised to merge and areas of historical condor use (not frequented since the 1970s and early 1980s) are now being explored. Land managers and agencies working on California condor recovery can no longer view management issues from the limited perspective of their release sites.

Range expansion and long distance movements are signs of program success for this highly endangered species. They indicate increasing population and independent foraging behaviors. The social nature of the species also creates a dynamic element that influences long range movements over time. The experimental nature of reintroducing this endangered species back into the wild after removing 100% of individuals in the late 1980s created an artificial, total absence of condors across their historical range. This absence allows development projects to move ahead without considering potential impacts to condors, even in areas within their historical range, between southern and central CA. Planning efforts to date have been based on limited data on how birds released from captive release sites would behave and expand their range as their population increased.

Renewable energy projects, wind energy in particular, pose risks to condors; and new developments within current, documented condor range require planning and consultation with the USFWS. Wind energy is growing and a new wave of projects is expected in response to 2015 legislation that requires an increase in the proportion of CA energy from renewable sources, from 33% to 50%. Large, industrial-scale wind energy projects in CA consider central and southern CA flocks separate, static, and persisting solely within their current ranges. This misconception will ultimately result in development within condor habitat that could create barriers to range expansion and recovery. The timing is now critical for evaluating condor movements across the landscape with respect to renewable energy plans. Proactive condor recovery planning necessitates an assessment of condor range expansion to inform upcoming projects that pose threats to their survival, as well as recovery priorities and management actions. In this project, investigators from CSU will collaborate with NPS at PINN to develop a predictive GIS model, or tool, that would not only enable agencies to provide scientific probability of condor use within currently vacant habitat between southern and central CA, but would help inform recovery goals and management actions.

Keywords: California condor, range expansion, development , National Park Service, Colorado State University