

OVERPOPULATION OF COMMON RAVENS IS HARMING CALIFORNIA

A Position Paper of the Coalition for a Balanced Environment – March 2016

Background

Over the last several decades, the population of the common raven (*Corvus Corax*) has proliferated in California bolstered primarily by human-provided subsidies of food, water, and nest sites associated with a variety of land uses (Desert Managers Group 2010). Large numbers of ravens are now nesting around landfills and water sewage facilities, swarming around open trash bins, and predating on threatened and endangered species including California's state reptile, the desert tortoise (*Gopherus agassizii*). California's unchecked raven population is causing an imbalance in California's native wildlife population and is a major concern for the state's agricultural and renewable energy industries.

Raven Population Growing Exponentially in California Due Largely to Human Subsidies

From 1969 to 2004 the numbers of common ravens in the west Mojave Desert increased approximately 700 percent (Boarman and Kristan 2006). Population increases have also been noted at other locations in the California desert. From 1968 to 1988, raven populations increased 4.7-fold in the Colorado and Sonoran Deserts (Bureau of Land Management et al. 1989, Table 1). The significant growth of raven populations above historic levels and a shift from a migratory species to a resident species is due in a large part to recent human subsidies of food, water, and nest sites (Knight et al. 1993, Boarman 1993, Boarman and Berry 1995). The U.S. Fish and Wildlife Service (USFWS) notes that from 1966 to 2006 the number of common ravens observed during surveys increased 1,685-fold while golden eagles, greater roadrunners, and red-tailed hawks increased 5-, 13-, and 57-fold, respectively. Raven population numbers have increased at a rate that is disproportionately greater than other predatory birds in the California desert. (U.S. Fish and Wildlife Service 2008)

Raven Predation on California's Wildlife is Causing an Ecological Imbalance Especially on California's State Reptile, the threatened desert tortoise

The common raven is a highly adaptive and intelligent predator. Raven predation on hatchling and juvenile desert tortoises is especially intense (U.S. Fish and Wildlife Service 1994). Common raven predation on desert tortoise hatchlings and juveniles has shifted the composition of the desert tortoise population to predominantly adult desert tortoises by removing a substantial proportion of hatchling

and juvenile desert tortoises in some areas, and has adversely affected recruitment (Berry et al. 1986).

The USFWS cites reports from several researchers and field biologists of numerous carcasses of hatchling and juvenile desert tortoises beneath raven nests and perch sites (USFWS 2008) including:

- 136 dead bodies or carcasses of juvenile desert tortoises with evidence of raven predation found at the base of fence posts on the perimeter of the Desert Tortoise Natural Area (Campbell 1983).
- Within a 4-year period, 250 juvenile desert tortoise carcasses were located beneath one raven nest in the west Mojave Desert (Woodman and Juarez 1988).
- A scientific researcher reported that 29 and 44 percent, respectively, of the desert tortoise deaths or mortality at two study plots during a 6-year period, were probably caused by raven predation (Berry et al. 1986).
- At another location, 70 percent of the mortality of juvenile desert tortoises was attributed to raven predation (Berry et al. 1986).
- Ravens have been observed attacking and eating juvenile desert tortoises (Berry 1985, Boarman 1993).
- Ravens eat hatchling and juvenile desert tortoises by pulling off the head and limbs (40 percent) or pecking holes through the soft carapace (upper half of the shell) (46 percent) or plastron (lower half of the shell) (13 percent; n = 341) (Boarman and Heinrich 1999).

Federal and State Agencies Struggle with Growing Raven Populations

Federal and state management agencies have struggled with managing the raven and its impacts on the desert tortoise and other wildlife. The Bureau of Land Management (BLM) significantly curtailed its efforts to reduce raven predation of desert tortoises around 1994 (USFWS 2008). The USFWS, in conjunction with other federal agencies, issued a final Environmental Assessment (EA) to reduce raven predation on tortoises in 2008 and authorized implementation of raven management measures under a Finding of No Significance (FONSI) in March 2008. In its 2008 EA, the USFWS stated that *“currently there is no organized program being implemented to reduce the number of common ravens in the California desert.”* Now, 8 years after federal agencies adopted raven management measures, there are still no organized efforts to manage the raven population explosion.

In 2002, the California Department of Fish and Game (CDFG) (now renamed Department of Fish and Wildlife (CDFW)) published a comprehensive study of corvid predation on threatened and endangered species in California with a focus on the American Crow, Common Raven (*Corvus corax*), American Crows (*Corvus brachyrhynchos*) and Steller's Jay (*Cyanocitta stelleri*). The CDFG observed

*“Corvids have been documented preying on the nests or young of the following threatened or endangered species in California: California Condors (*Gymnogyps californianus*), Greater Sandhill Cranes (*Grus canadensis tabida*), Western Snowy Plovers (*Charadris alexandrinus nivosus*), California Least Terns (*Sterna antillarum browni*), Marbled Murrelets (*Brachyramphus marmoratus*), San Clemente Island Loggerhead Shrikes (*Lanus ludovicianus mearnsi*), Least Bell's Vireo (*Vireo bellii pusillus*), and desert tortoises (*Gopherus agassizii*). American Crows and Common Ravens have been documented as the most important nest predators on Western Snowy Plovers and California Least Terns in several locations in California. In some cases, predation by crows and ravens has caused California Least Terns to abandon their nesting colonies for a season. In addition, predation by crows and ravens is the principal cause of nest failure for Western Snowy Plovers in many locations” (Liebezeit, J.R. and T.L. George 2002).*

Similar to the USFWS conclusion that no organized program exists to address increasing raven populations, the CDFG also concluded in its 2002 report: “At this point, raven control has been short-term and sporadic.” To date, it is unclear if the state of California has implemented any of the recommendations of its own 2002 report.

Local Governments Lack of Enforcement of Trash, Water and Other Public Ordinances Contribute to Raven Population Increases

Similar to limited federal and state efforts, most local government agencies have failed to reduce human subsidies fueling raven population growth. All cities and counties have existing trash, water, and other public health and safety ordinances that – if enforced – could have a significant impact on reducing raven population growth. However, local ordinances that could support raven management are not adequately enforced.

Without Effective Raven Management, California's Leading Agricultural and Renewable Energy Industries are Hampered

In addition to having negative effects on California's sensitive ecosystems, California's excessive raven population is harming the State's agricultural concerns and delaying the development of renewable energy.

California's agricultural production is unparalleled globally and is a critical economic driver for both the state and country. Documentation of excessive raven populations

affecting growers dates back decades. The over population of ravens is significantly impacting pistachio and tomato crops in particular and costing California growers millions of dollars annually (Salmon, T.P., et al 1986). Of course, this cost is ultimately borne by consumers in California and beyond.

Significant renewable energy production facilities are located in the California deserts. For years, companies developing renewable energy projects have been contributing funds on a per-acre basis specifically for raven management under a 2010 Memorandum of Agreement between the National Fish and Wildlife Foundation (NFWF) and the federal and state agencies organized as the Renewable Energy Action Team (REAT). In spite of the funding collected from renewable energy and other developers, federal and state agencies have yet to implement clear and effective raven management initiatives. Currently, the National Fish and Wildlife Foundation (NFWF) manages more than \$6 million dollars in developer fees for raven management (Alioto, Personal Communication 2015), but funding seems to be weighted toward research rather than implementation of pro-active raven population management.

The Growth of Raven Populations is a Regional Problem Affecting Wildlife and Industries in Other Western States

In neighboring Nevada, raven predation issues similar to those in California's desert are threatening Nevada's sage-grouse population. In response, Nevada Governor Brian Sandoval established the Governor's Greater Sage-grouse Advisory Committee by executive order in March 2012 (Greater Sage-grouse Advisory Committee 2012a). According to sources cited by the Nevada commission, the common raven was identified as the most frequent predator during the sage-grouse nesting season. The Nevada commission also noted that raven populations increased 600 percent in the Great Basin over the past 20 or more years. (Greater Sage-grouse Advisory Committee 2012b). The Great Basin comprises more than 72.7 million hectares (more than 179 million acres) across five states: Nevada, Utah, Idaho, Oregon and California. In 2014, citing ravens as a primary nest predator of sage-grouse eggs and chicks, the Idaho Department of Fish and Game announced that it would conduct both lethal and non-lethal control actions on ravens in three study areas in southern Idaho and evaluate whether raven removal improves sage-grouse populations (Idaho Fish and Game 2014). Similar raven issues and management efforts are underway in Wyoming and Montana.

THE COALITION FOR A BALANCED ENVIRONMENT

In light of the unfettered explosion in raven populations and its impacts on California's wildlife and ecosystems and industries, effective raven management initiatives are urgently needed.

The Coalition for a Balanced Environment (CBE) is composed of a diverse group of environmental and industry leaders dedicated to implementing on-the-ground measures to alleviate the devastating impacts of raven populations on California's wildlife and ecosystems.

The CBE and its coalition partners will support the following initiatives:

- Initiate public information and awareness campaigns through local media, social media, and government channels.
- Support additional research on effective raven management controls with a special emphasis on reducing raven predation on threatened and endangered species.
- Encourage local and regional health departments to enforce existing ordinances requiring closed waste containers, thereby reducing available trash and subsidies that contribute to growth of raven populations.
- Advocate for and support the implementation of raven management actions consistent with the USFWS Environmental Assessment to federal, state, and county agencies.
- Create and manage raven control programs in Desert Tortoise Management Areas, critical habitat for the desert tortoise, federal management areas, and other sensitive areas covered by USFWS Environmental Assessment.
- Support changes in federal and state laws and regulations to permit more productive raven population control measures.

Support

The CBE seeks broad-based support on this initiative from a wide range of interests including environmental groups, agricultural concerns and the renewable energy industry. CBE strongly encourages leading environmental and industry groups to endorse this Position Paper and join in its effort for re-balancing California's ecosystems through proactive raven management initiatives.

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Note: This position paper will be updated as needed to reflect new scientific information and progress by the CBE and others to bring action on this important issue.

REFERENCES

Alioto, Lawrence. Personal Communication. 2015. Meeting notes with National Fish and Wildlife Foundation Impact Grant Office. San Francisco, California.

Berry, K.H. 1985. Avian predation on the desert tortoise (*Gopherus agassizii*) in California. U.S. Bureau of Land Management, Riverside, California. Report to Southern California Edison Company. Cited in USFWS 2008. Page 4.

Berry, K.H., T. Shields, A.P. Woodman, T. Campbell, J. Roberson, K. Bohuski, and A. Karl. 1986. "Changes in desert tortoise populations at the Desert Tortoise Research Natural Area between 1979 and 1985." Desert Tortoise Council Proceedings of the 1986 Symposia:100–123. Cited in USFW 2008. Page 4.

Boarman, W.I. 1993. "When a native predator becomes a pest: a case study." In Conservation and Resource Management. Pgs. 191–206. (S.K. Majumdar, E.W. Miller, D.E. Baker, E.K. Brown, J.R. Pratt, and R.F. Schmalz, eds.). Penn. Acad. Sci., Easton, PA. Cited in USFWS 2008.

Boarman, W.I., and K.H. Berry. 1995. "Common Ravens in the Southwestern United States, 1968–92." Pp. 73–75 In Our Living Resources: a report to the nation on the distribution, abundance, and health of U.S. plants, animals, and ecosystems (E.T. Laroe, ed.). U.S. Dept. of the Interior, National Biological Service, Washington, D.C.

Boarman, W.I., and B. Heinrich. 1999. "Common Raven (*Corvus corax*)," In The Birds of North America, No. 476 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA. Cited in USFWS 2008. Page 4.

Boarman, W.I., and W. B. Kristan, III. 2006. Trends in common raven populations in the Mojave and Sonoran deserts: 1968–2004. Conservation Science Research and Consulting and Department of Biological Sciences, California State University, San Marcos. Report to U.S. Fish and Wildlife Service, Ventura, CA. Contract No. 814405M055. 36 pages.

Bureau of Land Management, Fish and Wildlife Service, and California Department of Fish and Game. 1989. Environmental Assessment for Selected Control of the Common Raven to Reduce Desert Tortoise Predation in the Mojave Desert, California. Bureau of Land Management, Riverside, California. Cited in USFWS 1994, Page 6.

Campbell, T. 1983. "Some natural history observations of desert tortoises and other species on and near the Desert Tortoise Natural Area, Kern County, California." Desert Tortoise Council Proceedings Symposium (1983): 80–83. Cited in USFWS 2008, Page 3.

Desert Managers Group. 2010. Common Raven Predation on the Desert Tortoise. November 2010. 8 pages.

Greater Sage-grouse Advisory Committee 2012a. Strategic Plan for Conservation of Greater Sage-Grouse in Nevada. July 31, 2012. 1-44. Page 17.

Greater Sage-grouse Advisory Committee 2012b. Strategic Plan for Conservation of Greater Sage-Grouse in Nevada. July 31, 2012. 1-44. Page 17. Citing: Coates, P. 2012. Person communication. Sage-grouse habitat recommendations. Presentation to the Nevada Sage-grouse Advisory Committee. Wildlife Biologist, U.S. Geologic Survey, Western Ecological Research Center, Sacramento, CA. Date June 19, 2012.

Idaho Fish and Game 2014. News Release. "Fish and Game to Study Raven Predation on Sage Grouse." March 17, 2014.

Knight, R.L., H.L. Knight, and R.J. Camp. 1993. "Raven populations and land use patterns in the Mojave desert, California." *Wildlife Society Bulletin* 21:469–471.

Salmon, T.P., Crabb, C.A. and Marsh, R.E. 1986. "Bird damage to pistachios. *California Agriculture*. May – June 1986. 5-8.

U.S. Fish and Wildlife Service. 1994. Desert tortoise (Mojave population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 73 pages plus appendices.

U.S. Fish and Wildlife Service. 2008. Final Environmental Assessment to Implement a Desert Tortoise Recovery Plan Task: Reduce Common Raven Predation on the Desert Tortoise. Fish and Wildlife Service, Ventura, California. March 2008. Page 4.

Woodman, A.P. and S.M. Juarez. 1988. "Juvenile desert tortoises utilized as primary prey of nesting common ravens near Kramer, California." (Paper presented at the 13th Annual Meeting and Symposium of the Desert Tortoise Council, March 26–27, 1988, Laughlin, Nevada.) Cited in USFWS 2008.