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# 2013 Presidential Migratory Bird Stewardship Award Submittal to the Council on the Conservation of Migratory Birds

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## Nomination Application - USFWS

[Guidance](#)[Nomination Information and Instructions Guide](#)[Appendix A](#); [Appendix B](#)

Site Name: Demonstration Site FY2012

1. Applicant (must be DOE; if more than one federal agency, list the lead agency):

U.S. DOE/NNSA, Livermore Site Office

2. Co-applicant(s) (any agency, organization, or private individual that should receive recognition for the project):

- DOE/LLNL, *Weapons and Complex Integration Directorate*, Site 300 Experimental Test Site, Manager's Office
- DOE/LLNL, *Facilities and Infrastructure Directorate*, Maintenance and Utility Services Department
- DOE/LLNL, *Environment, Safety, & Health Directorate*, Environmental Functional Area

3. Action (In two pages or less, describe DOE's action. Consider how DOE demonstrates leadership in the conservation of migratory birds.):

*ACTION: Avoiding and Minimizing Impacts on Protected Migratory Birds, Specifically Protected Birds of Prey, Through Implementation of an Avian Protection Policy Onsite*

**Overview**

DOE/LLNL understands its environmental stewardship role and responsibilities, including the protection of migratory birds. Strengthening migratory bird conservation activities onsite, following and creating opportunities to exceed avian protection law provisions, and enhancing collaboration between DOE and the U.S. Fish and Wildlife Service (FWS), has been a goal at DOE/LLNL. Using an environmental management system approach that conforms to the ISO 14001:2004 International Standard, DOE/LLNL incorporates all applicable environmental laws and regulations into its mission activities.

The DOE/LLNL Site 300 Experimental Test Site (Site 300) provides habitat for an abundance of migratory birds including a diverse concentration of birds of prey. Through the environmental management system approach, DOE/LLNL identifies and mitigates site operations with potential to impact birds of prey. To minimize collision and electrocution fatalities of migratory birds and birds of prey, DOE/LLNL independently initiated an avian protection policy onsite that supports avian-friendly transmission lines, insulators, power poles, and other features.

**Avian Electrocution Risk: A Complicated Issue Onsite**

## Identifying areas

As part of the LLNL/DOE avian protection policy (to avoid and minimize take of migratory birds), it was necessary to determine where the most effective utility-oriented, conservation measures for birds of prey could be employed at Site 300. Identifying target areas was complicated by topographic variances, microsite differences in wind directions/speeds, annual shifts in prey populations/location, and differing bird of prey species behavior.

Over 500 power poles and associated energy utility structures provide the infrastructure needed to support programmatic testing and research interests across the nearly 7,000 acre site. Birds use power poles at Site 300 for foraging, resting, roosting, nesting, and shading from sun and/or inclement weather. Studies have shown that avian electrocutions tend to be more common in open grassland areas with power poles (like Site 300) than in forested areas where available perch sites are more plentiful.

An effective avian protection policy aimed at utility protection for bird of prey populations requires distilling several variables: the diversity of birds of prey that use the property and their preferred power pole use areas; cyclical prey populations and the most often occupied hunting areas; and varying wind directions/speeds that are important in identifying soaring and resting sites.

Site 300's diverse habitats, topography, and abundant prey base attracts nearly 20 bird of prey species in total (see Table 1 under Question 11), including the federally-protected and state fully-protected golden eagle. Additionally, the Site 300 geographic region has been recognized as the densest known population of golden eagles in the world. Depending on the time of year (season), golden eagle and other bird of prey species may use Site 300 as a resident (permanent) or migratory (seasonal orientation) species.

### ***Low Success with the Marketed Avian Protection Products***

DOE/LLNL's initial attempts to retrofit power poles and associated risk components for birds of prey met with mixed results. In the early 1990's, a golden eagle and several hawks were electrocuted (over only a few months) on four power poles onsite. DOE/LLNL responded by initiating a power pole modification policy for the five poles and an additional seven that appeared potentially hazardous to birds of prey based on use frequency.

The twelve distinct locations received a state-of-the-art device ("UV-proofed") plastic cap which covered the center electrical phase of the cross arm thereby removing phase-to-phase contact issues and allowing safe perch sites for birds of prey. Within seven years, all of these devices had disintegrated or deteriorated beyond functional use.

Manufacturers offer a variety of cover-up materials to limit the electrocution potential of a pole, however, these covers can track (leak) electricity and/or blow off overtime. Additionally, inner Coastal Range winds at Site 300 deliver some of the highest speeds recorded in the region and occur during all four seasons.

### ***2011-2012 Avian Electrocution Problems and Tailored Conservation Strategies***

Between June and November 2011, power poles onsite caused 20 bird of prey deaths: 2 golden eagle, 14 red-tailed hawk, 1 American kestrel, and 3 barn owl fatalities related to power poles occurred onsite. Seven power poles caused the majority of these deaths with 2 or more non-eagle raptor electrocutions occurring at each pole in the last year. Recurring fatalities indicated a higher electrocution risk for particular species at these seven power poles. Thus, a long-term and robust solution evolved: address the hazardous perch sites by blocking them from further avian use and/or add safe, free-standing perches to power pole areas that birds of prey frequent.

DOE/LLNL installed UV-resistant PVC triangles in a way to fully discourage birds of prey from perching on the cross arm arrays of five of the seven hazardous poles. Additionally, to allow alternative, safe perch sites for birds in these high traffic areas, DOE/LLNL installed 5 non-energized poles (stand alone) with cross arm arrays in multiple directions within roughly 25' of the original hazardous pole. The non-energized poles lack chemical treatments and are at least 6' taller in stature than the original pole to support the viewshed perspective of the birds. Finally, DOE/LLNL removed a corvid nest from an energized pole and installed a nest platform, on a non-energized pole, to promote continued occupation of the area by corvids or birds of prey.

The average cost for each pole modification combined with a new perch pole was \$3,300; or roughly \$20,000 for completion of the entire retrofit of seven hazardous power poles, and one nest platform.

### ***Conclusion***

Due to DOE/LLNL's power pole focused policy to protect, enhance, and manage habitats of migratory birds, to the fullest

extent practicable, no bird of prey fatalities have subsequently been recorded at these sites. Implementing management practices that avoid and minimize adverse impacts on migratory bird populations, and their nesting, foraging, migration, staging, or wintering habitats is an integrated policy at Site 300 now and in the future. The project is substantive as a migratory bird conservation strategy tailored at the local level (Site 300 Manager's Office), involving minimal external procedural hurdles, accomplishing specific goals for migratory bird conservation (specifically birds of prey) and allowing performance in a speedy and expeditious manner with demonstrable results.

4. When was the action initiated?

Winter of 2010-2011.

5. Describe the scale of your project. Does the action take place locally, statewide, regionally, across several regions or more within the United States, or internationally?

The action occurs locally on the DOE/LLNL Site 300 Experimental Test Site property of 7000 acres and has the opportunity to positively affect and safeguard an immeasurable number of resident and migratory bird of prey species that visit or migrate through the area to forage or nest seasonally throughout a given year.

6. Does the action meet or exceed agency mandates? Please explain.

The action exceeds agency mandates. Under the self-imposed avian protection policy at Site 300, DOE/LSO offered (working collaboratively with FWS Law Enforcement) to modify the two power poles resulting in single eagle deaths in 2011 to avoid future fatalities to birds of prey. Additionally, LSO/DOE uses a two-fatality count rule per year to serve as the bird of prey threshold for power pole modifications onsite. DOE/LLNL sees strengthening migratory bird conservation activities onsite; creating opportunities to exceed avian protection law provisions; and enhancing collaboration between DOE and the FWS, as appropriate and necessary.

7. Explain how the action promotes or results in effective migratory bird conservation. Please include examples of demonstrable results and actions to support your answer. If the action is innovative (inventive, clever, and original), describe that here too.

Acquiring reliable, national estimates of avian population mortality is a monumental task and the threats to birds from human development show increased trends in the United States and elsewhere globally. Migratory bird populations undergo considerable human-caused fatality from developed structures. Collisions with power transmission and distribution lines may kill anywhere from hundreds of thousands to hundreds of millions of birds annually, and power poles electrocute tens to hundreds of thousands of additional birds, annually. Most utilities are poorly monitored for migratory bird fatalities.

In a high density resident and migratory bird of prey center, and the world's largest golden eagle population (e.g., Site 300), the obvious conservation principle is to limit the utility hazards available to the species. By carefully determining high-risk areas and promoting safe structures for birds to use, a win-win position for DOE/LLNL and programmatic research interests of the test site can move forward successfully.

Conservation actions for migratory bird populations at a small site like DOE/LLNL promotes recognition and understanding that retrofitting power poles can result in a tangible reduction, at least 20 less per year as occurred in 2011-12, of hawk, eagle, or owl fatalities. Additionally, Site 300 personnel are aware of the conservation interests for birds of prey onsite (e.g., through natural resource protection briefings that include the avian protection policy elements) and staff have become an invaluable asset in locating injured or dead birds. Some previously injured birds of prey have been successfully rehabilitated and re-released at Site 300.

8. Describe the roles and responsibilities of partners and co-applicants (if any). Partners are associated with the action through monetary or in-kind support.

Co-applicants

The DOE/LLNL, *Weapons and Complex Integration Directorate*, Site 300 Experimental Test Site, Manager's Office provided initial funding and site management support for the first three power pole retrofits to be performed;

The DOE/LLNL, *Facilities and Infrastructure Directorate*, Maintenance and Utility Services Department provided funding for the final four power pole retrofits and crafts shop expertise to perform the entire suite of power pole modifications safely;

The DOE/LLNL, *Environment, Safety, & Health Directorate*, Environmental Functional Area provided programmatic support on migratory bird ecology issues and design plans.

9. Have others expressed an interest in this work? If so, please explain who is interested and why. This has been a “grassroots” initiative onsite and has only been recognized at DOE/LLNL.

10. How did the action impact DOE’s current migratory bird conservation practices (i.e., were new initiatives drafted or was new guidance written)?

Electrocution issues and awareness, widespread program assistance in documenting electrocutions onsite, and guidance on power pole modification designs useful sitewide are now a part of the avian protection policy implementation at Site 300.

11. Which migratory bird species of concern benefited from your action? In addition, please describe completed project actions and how these contributed to migratory bird conservation. If specific migratory bird species have not yet benefited, how does your agency hope to contribute to the conservation of a migratory bird species as the project continues?

DOE/LLNL targeted high-use bird of prey areas for power pole retrofits (areas with known and long term avian presence). Perch guards and non-energized perch poles are expected to allow an ongoing, non-lethal exposure (benefit) to bird of prey species onsite and those individuals moving through the area as migrants. See Table 1 (below) for migratory birds and migratory bird species of concern benefitting from this action.

If, in the future, additional power poles warrant modification, then funding will be sought to perform the retrofits. Future actions will further contribute to further conservation of bird of prey species onsite.

**Table 1: List of bird of prey species benefitted by the action, Site 300**

Taxonomic Group	Common Name	Scientific Name	Regulatory Protection(a)	Migratory Bird Species of Concern?
<b>Birds</b>				
	Red-shouldered Hawk	<i>Buteo lineatus</i>	MBTA	
	Osprey	<i>Pandion haliaetus</i>	MBTA	
	Golden Eagle	<i>Aquila chrysaetos</i>	CAFPS, MBTA, EPA	✓
	Rough-legged Hawk	<i>Buteo lagopus</i>	MBTA	
	Ferruginous Hawk	<i>Buteo regalis</i>	MBTA	✓
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	MBTA	
	Swainson's Hawk	<i>Buteo swainsoni</i>	ST, MBTA	✓
	White-tailed Kite	<i>Elanus leucurus</i>	CAFPS, MBTA	
	Cooper's Hawk	<i>Accipiter cooperii</i>	MBTA	
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	MBTA	
	Northern Harrier	<i>Circus cyaneus</i>	CASSC, MBTA	
	Prairie Falcon	<i>Falco mexicanus</i>	MBTA	✓
	American Kestrel	<i>Falco sparverius</i>	MBTA	
	Barn Owl	<i>Tyto alba</i>	MBTA	
	Short-eared Owl	<i>Asio flammeus</i>	CASSC, MBTA	✓
	Great Horned Owl	<i>Bubo virginianus</i>	MBTA	
	Burrowing Owl	<i>Athene cucularia</i>	CASSC, BCC, MBTA	✓
	Western Screech Owl	<i>Megascops kennicottii</i>	MBTA	
	Merlin	<i>Falco columbarius</i>	MBTA	
BCC = U.S. Fish and Wildlife Service Birds of Conservation Concern (US Fish and Wildlife Service 2008) CAFPS = California Department of Fish and Game Fully Protected Species (CA Fish and Game Code Section 3511) CASSC = California Species of Special Concern (CA Dept. of Fish and Game, Special Animals List, March 2006) EPA = Eagle Protection Act ESA = Endangered Species Act FT = Threatened under the federal Endangered Species Act MBTA = Migratory Bird Treaty Act SE = Endangered under the California Endangered Species Act ST = Threatened under the California Endangered Species Act				

\*Species of Concern List or Appendix B (Endangered Species Act – Listed and USFWS Birds of Conservation Concern) provided with application.

**Project Title:** Avoiding and Minimizing Impacts on Protected Migratory Birds, specifically Protected Bird of Prey Species, through Implementation of an Avian Protection Policy Onsite

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Description