



Native Grasslands Conservation

From small roadsides to vast landscapes, grassland habitats benefit corporate biodiversity and sustainability goals

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A ringlet butterfly at OPG's Chats Falls Generating Station on the Ottawa River, Canada.

Message from our sponsor:

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Across Ontario, Ontario Power Generation (OPG) is working to help create a sustainable future with cleaner air, stronger economies and more livable communities. Producing almost half of Ontario's electricity, we are committed to ensuring our energy production is reliable, safe and environmentally sustainable. OPG's Environmental Policy commits us to science-based habitat stewardship and the protection and enhancement of significant natural areas and species of concern on our properties.

OPG has been a proud member of the Wildlife Habitat Council (WHC) since 1996. Our WHC-certified on-site habitat programs have received numerous awards recognizing our conservation efforts and engagement of community groups, educational institutions, and conservation organizations.

We are pleased to sponsor this white paper on grassland enhancement and conservation. Grasslands mitigate the effects of climate change, while also providing habitat for species at risk, improving pollinator health, and supporting biodiversity. That is why OPG has invested in

developing new grassland habitat at our R.H. Saunders and Lennox Generating Stations and why we continue to explore new grassland development opportunities with our Regional Biodiversity partners.

At R.H. Saunders, the planned grassland will be part of the landscape development plan around the Saunders Visitor Centre in conjunction with the newly developed butterfly and herb garden started in partnership with our Akwesasne and Cornwall community partners. At our Lennox Generating Station, OPG has partnered with our neighbour, Napanee Generating Station, to create a new wetland-grassland complex that will increase critically needed shoreline habitat. Reaching beyond our properties, OPG's regional conservation partners have enhanced or created over 400 acres of grasslands and wetland across southern Ontario. Through the coordinated efforts of corporations, conservation and research organizations, and education partners, along with support from groups like WHC, we can all help secure the long-term future of grassland habitat in North America.

*Aaron Del Pino
Vice-President – Environment, Health & Safety
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Introduction

Grasslands are one of the most common habitat types in the world and one of the most threatened. Grasslands are best known as prairies, savannahs, steppes and pampas—large plains in remote areas where spectacles of nature occur such as the great wildebeest migration in the Serengeti, and where high biodiversity values for both flora and fauna are recorded. But grasslands can also be meadows, lawns and pocket prairies supporting biodiversity in prosaic locales like corporate campuses, factory sites and even landfills.

Grasslands are versatile and prove the WHC mantra that *every act of conservation matters*. Regardless of size and situation, restoration of grasslands, or conversion to grasslands from other uses, will bring biodiversity benefit to even the smallest places.

Managing grasslands in nature-friendly ways and for connectivity will realize multiple values for many stakeholders, including benefits to climate change mitigation and adaptation, stormwater run-off, cost savings and aesthetics.

While large acreage grasslands provide habitat for megafauna like bison and antelope, smaller grasslands provide habitat for pollinators, small mammals, grassland birds and raptors, like the American kestrel.

Many of WHC's members' longest-running grasslands projects are those focused on installing and monitoring bluebird boxes. These projects are perfect 'starter' conservation actions for new efforts. Creating and installing boxes can be done by employee teams and the required monitoring is straightforward with minimum time requirements. Small acreages can support these simple projects and are an easy way to gain success in a short period of time. The eastern bluebird is just one of the many grassland species helped by the installation of bluebird boxes for mating pairs.

Grassland projects, as seen in this white paper, do not stop at bluebird boxes. They can be implemented across land uses, geographies, industry sector and size. Small projects to restore grasslands for pollinators can have immediate



The western meadowlark relies on grasslands in western and central North America for breeding and foraging.

impact while larger grasslands efforts whether on remnant grasslands, utility rights-of-way or elsewhere can require years of controlled burns and herbicide applications before a balanced meadow that self-perpetuates emerges.

The human dimension is easy to include in grassland projects. Many are accessible to people of all ages, abilities and interests. Grassland projects can be used as outdoor classrooms for environmental and STEM (Science, Technology, Engineering and Math) education—as trails for health and wellness and locations for art and photography, from the larger landscape to the smallest blossom.

This white paper celebrates grassland projects of all shapes and sizes and shows how the private sector can meet a convergence of citizenship and operational goals through projects that seek to reclaim grasslands and restore biodiversity.

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Lawn replacement

Converting lawns to native grasslands for wildlife

Many corporate facilities sit adjacent to sprawling landscapes that are continually maintained for a pristine, manicured aesthetic. But these green rolling lawns are an illusion of nature. They are disconnected from the surrounding lands and contribute little to the functionality of the ecosystem.

While the primary purpose of corporate lands is not habitat, returning lands to nature can better serve financial, sustainability, and employee and community engagement goals, thus becoming a valuable corporate asset. Additionally, there exists an important opportunity to contribute to community needs and education in urban areas of high potential where green spaces are lacking.

Methods to convert lawn areas to native grassland habitat range from simple—reduced mowing or overseeding—to complex—removal of existing vegetation and reseeding the area with native species. Native grassland maintenance is significantly less intensive than the repeated mowing, irrigation, fertilizing and pest control

required for turf grass lawns, saving approximately \$7,000 per acre in the first year alone and more \$85,000 per acre over ten years.¹

Converting lawns to native grasslands will bring nature back by providing food and shelter for birds and pollinators, and a field colorful wildflowers and arching grasses can be just as visually pleasing—if not more so—for employees and visitors than a manufactured lawn.

The DTE Energy River Rouge Power Plant in southeast Michigan converted several lawn areas into native grassland, which now offers quality habitat for wildlife in an urban setting designated as a “hot spot” of environmental injustice.

Located on the banks of the River Rouge in downtown Detroit, the 105-acre River Rouge Power Plant provides valuable habitat for wildlife in an urban industrial setting that was greatly lacking in green space. The property includes several grassland areas, including two reduced mowing areas and a lawn area converted to prairie habitat.



Native grassland habitat along the Detroit River in Michigan.

The reduced mowing areas are comprised of 15 acres and are located primarily along roadways and were designed to provide connectivity between other habitat areas on-site. Annual mowing is used in combination with targeted herbicide spraying to control the spread of invasive species. Native vegetation was also planted to enhance these areas for wildlife.

DTE Energy also converted a 5-acre lawn to native prairie habitat by removing the turf grass, planting the area with native grasses, wildflowers and trees, and installing bat houses and snake hibernacula. The native plantings include a variety of species that provide food for migrating birds, which stop over at the site in large numbers each spring and fall. The area is also controlled for invasive species such as Canada thistle and phragmites.

Since the implementation of grassland management in these areas, plant and animal biodiversity have experienced a marked increase. Employee volunteers have monitored a variety of wildlife using the site's grassland habitats, including coyotes, deer, the endangered eastern fox snake and a variety of

migratory and residential birds. Blue wild indigo, an important host plant for the state endangered Karner blue butterfly, has also been found growing on both the reduced mowing areas and the restored prairie.

From inception, the nature area was meant to be enjoyed not only by employees but also the surrounding community, which lacked a useable source of greenspace. DTE Energy hosts events at the Plant several times a year, inviting local elementary schools and other community groups to participate in nature walks along the trails, tree planting, invasive species removal, pond sampling, and educational presentations about Michigan's animals.

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Roadsides

Abundant, yet overlooked, areas for habitat

Common yet overlooked areas that can be used for conservation are the long, narrow strips of land that occur along roads and highways. On corporate lands, roadsides exist not only on the property but on the boundaries next to public roads.

Roadsides can have significant capacity for the creation of linear grasslands that benefit wildlife while also improving aesthetics in high-visibility areas. Studies have found that restoring roadside vegetation to native grassland communities can have profound positive impacts on the diversity and abundance of species like butterflies and native bees.^{2,3} They also have the potential to enhance habitat connectivity as corridors or stepping stones, particularly in areas experiencing severe habitat loss and fragmentation.⁴

Roadsides typically involve smaller tracts of land than most grassland projects. These areas are also already being managed, so practices could be easily adapted for native grassland species without a significant shift in existing resources.⁵ Adapting roadside management to more nature-friendly

approaches therefore offers a relatively easy stepping stone into corporate conservation.

In the city of Sorocaba, Brazil, the General Motors (GM) - Chevrolet Logistics Center manages several roadsides as native grassland habitat.

Located on 74 acres in the state of São Paulo, the General Motors - Chevrolet Logistics Center is a distribution facility for Chevrolet parts produced by GM Brazil and its suppliers. Since 1996, GM has coordinated with landscapers to implement no-mow zones in five different roadside areas on the site. Although mowing is prohibited in these strips of roadside grassland habitat, which totals approximately 1.7 acres, the edges are still trimmed to prevent overgrowth of vegetation onto the roads and to provide a visual signal to passers-by that the areas are still being maintained.

Employees monitor the roadside grassland strips on a bi-weekly basis to check for plant growth and the presence of new species of flora and fauna. Through



A no-mow zone along a roadside at the GM - Chevrolet Logistics Center in Brazil.

these efforts, GM employees have observed numerous plant species and a variety of birds, butterflies, reptiles and insects in the habitat.

GM also partners with local primary schools to implement an education project on-site to raise awareness about the environment and conservation. The curriculum engages students in active learning about the life cycle of plants and native species, as well as hands-on engagement through planting seedlings.

WHC-CERTIFIED SINCE 2018



Native Grasslands for Nature-Based Learning

Using grasslands for nature-based education increases awareness about this important ecosystem, motivates further learning, increases awareness, and meets corporate citizenship goals. Activities that are focused on conservation and biodiversity offer meaningful, equitable and accessible opportunities to build sustainable engagement that offers employees and community members a chance to get active, learn something new, and make a positive contribution to the environment.

Utility rights-of-way

Creating connections for species and habitats

Rights-of-way (ROWs) networks for utilities such as powerlines and pipelines are ubiquitous sights along landscapes around the world. In the U.S. alone there are approximately 21 million acres of utility ROW land.

To ensure safe operation of utility infrastructure, vegetative cover along these ROWs must be managed to prevent the growth of certain species, such as removing trees and other tall vegetation that may interfere with power lines. Companies and their contractors have recognized that managing ROWs as native plant communities like grasslands can fulfill these vegetation management requirements while also reducing long-term maintenance costs and providing habitat for wildlife.

When managed as or restored to native grassland habitat, utility ROW landscapes can play a valuable role in the conservation and management of many species, including pollinators, birds, and reptiles, serving as linear refuges of habitat for breeding, foraging and movement corridors.⁶ Powerline

ROWs alone have the potential to provide 5 million acres of valuable foraging and nesting resources for native bee populations and other wildlife.⁷ Grassland communities along ROWs can also provide suitable habitat for snakes,⁸ as well as important breeding habitat for ground-nesting and scrub-nesting birds and post-breeding habitat for forest interior birds.⁹

When managed as or restored to native grassland habitat, utility ROW landscape can play a valuable role in the conservation and management of many species.



Grassland managed at the ITC ROW that runs through the Crow Island State Game Area.

ITC manages many of its electrical transmission ROWs as native grassland communities, partnering with neighboring preserves and parks to coordinate grasslands management goals.

ITC, an independent electrical transmission company headquartered in Michigan, maintains several electrical transmission ROWs in Michigan and Iowa as native habitat. Many of these ROWs run through parks, nature preserves or other natural areas and are managed to provide increased habitat connectivity with the surrounding lands.

For the past decade, ITC employees have worked with the Michigan Department of Natural Resources (MDNR) to manage conservation work on an ITC ROW that runs through the Crow Island State Game Area in southeast Michigan. ITC manages 110 acres of the area as native grassland to promote native species and safe operation of the electrical transmission lines. Activities are coordinated to ensure they align with the MDNR's conservation goals for the state game area and include prescribed fires, mowing, trimming and removal of

hazard trees, and selective application of herbicide.

ITC also works with the MDNR and others to implement annual assessments to determine management actions needed to increase the presence of native grassland habitat and decrease the presence of invasive species. Citizen volunteers also contribute to surveys of vegetation and wildlife using the grassland areas. These monitoring efforts have led to the discovery of the presence of the endangered eastern prairie fringed orchid and several avian species of concern in the habitat.

WHC-CERTIFIED SINCE 2013

Landfills

Managing native grasslands on capped waste material

When a landfill reaches capacity, the waste is covered, or “capped,” by material such as clay or geomembrane. Caps isolate contaminants to keep them from spreading and coming into contact with people and wildlife. Approximately 3,200 municipal solid waste landfills in the United States have been closed since 1980,¹⁰ and many of them have been converted for parks and recreation.

Native grassland communities are generally well-suited for providing permanent vegetative cover on landfill caps, while also fulfilling secondary uses such as wildlife habitat and open space for communities.¹¹ Native warm-season grasses in North America, for example, have deep, extensive root systems that hold the cap and topsoil in place and add organic matter to the soil, increasing its capacity to absorb rainfall and runoff.¹² These roots also foster the presence of bacteria that consume landfill gasses, improving air quality and preventing the release of greenhouse gasses like methane. In addition, these deep roots do not penetrate the cap, instead growing laterally once they reach the clay or geomembrane.¹³

Managing native grasslands vegetation on capped landfills can also have economic benefits. In a study comparing the maintenance costs for vegetative cover on a 30-acre capped landfill, the U.S. Environmental Protection Agency found that native grasslands cover saved tens of thousands of dollars on maintenance costs compared to turf grass.¹⁴

In Wichita, Kansas, the Boeing Emery Landfill maintains a thriving native prairie community on its closed landfill cells.

The Boeing Emery Landfill is an 82-acre site located next to the Arkansas River in Wichita, Kansas. The property is home to three closed landfill cells of approximately 58 acres, which were used for the disposal of construction and demolition debris. In 2000, Boeing began converting the vegetative cover on these cells to native grasslands habitat. The native grasses and wildflowers protect the integrity of the landfill caps, while also providing valuable habitat for bees, butterflies, grassland birds and other wildlife.

Like most grassland habitat, the Emery Landfill



Wildlife such as deer, wild turkey and raccoons use the grasslands at Emery Landfill for shelter, food and water.

grasslands require continual maintenance to remove invasive species like Johnsongrass and honeysuckle, as well as undesirable woody species that could compromise the caps. To control these species, Boeing uses routine mowing and spot-spraying of herbicide. In addition, the cells have been overseeded (spreading of seed over existing grass and plants) several times in the past few years, with native plant species including those recommended by MonarchWatch to benefit monarchs and other pollinators.

Regular monitoring to evaluate vegetation, as well as the use of game cameras to monitor wildlife, has shown the grasslands habitat to be a thriving ecosystem, supporting a variety of species such as pollinators, ground-nesting birds, wild turkey, deer, hawks, bobcats and coyotes.

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The Importance of Monitoring

Whether managing existing grasslands or developing a new one, monitoring is an essential component of any grasslands project. Regular monitoring allows you to keep tabs on the success of a project and can help in identifying actions needed to better meet goals and provide quality habitat for grasslands-dependent species.

Ranches and pastures

Benefitting the business of livestock with conservation

Raising livestock such as cattle and sheep requires open grasslands for grazing. Although conventional practices maintain these areas as non-native grasslands, livestock grazing practices and native grasslands management can complement—and even benefit—each other.

Grazing generally has a positive impact on the diversity, abundance and distribution of native plant populations.^{15,16} In turn, native grasses and wildflowers provide nutritious forage for livestock.

In Dillon, Montana near Yellowstone National Park, the Koch Beaverhead Ranch employs several practices that successfully balance the needs of livestock grazing and the native grasslands ecosystem.

The Beaverhead Ranch is an active cattle ranch in the Centennial Valley Watershed of southwestern Montana, encompassing 345,000 acres, and is managed by the Matador Cattle Company, a subsidiary of Koch. For several decades, Beaverhead Ranch has worked to maintain large tracts of the property as native

grasslands, balancing the needs of livestock with those of the numerous and diverse species on-site, including sage-grouse, elk, pronghorn, mountain bluebirds, and bald and golden eagles.

The employee team at Beaverhead implement rotational grazing of cattle, which helps control invasive species, promote native grass growth, and create more heterogeneous grassland communities. Traditional barbed-wire fencing was replaced with wildlife-friendly fencing that restricts cattle movement while allowing other animals to cross without injury. Special fencing is also strategically deployed to redirect elk away from certain grazing tracts and into historical habitat on-site.

Noxious weeds (plants that are toxic to livestock) and invasive species are a continuous concern in the grasslands, so Koch works annually with the Beaverhead County Weed Director to survey for spotted knapweed, whitetop, hoary alyssum, black henbane, houndstongue and leafy spurge. Employees deploy herbicide application or biological controls in target areas, and community members assist with removal





An American elk grazes in the grasslands habitat at Koch's Beaverhead Ranch in Montana.

efforts on county weed days. Koch recently added approximately 10,000 acres of grasslands to the project, doubling the amount of grassland habitat and providing connectivity between managed land areas.

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Pocket Prairies

Creating small patches of grasslands, sometimes called “pocket prairies,” can have significant value as an educational tool for land-limited facilities. When placed in high-visibility locations, pocket prairies featuring native grasslands plants and informational signage demonstrate the value and beauty of native species and grasslands habitat to employees and visitors.

Remediation applications

Returning land to nature

Integrating ecological considerations into remediation sites is becoming increasingly common. One strategy for doing so is through the establishment of native grassland communities on cleanup sites. In addition to providing value to biodiversity, native grasslands vegetation can be useful in a number of remedial functions, including establishment of permanent vegetative cover over a completed or capped cleanup site, creation of an evapotranspiration cover (a type of cap that prevents water from reaching the contaminated material), control of erosion, management of stormwater runoff, and even absorption and stabilization of heavy metals.¹⁷

The employees at BP Dutchman in Butte, Montana established a native grassland community to provide permanent vegetative cover on this remediation site.

The Dutchman facility is located on 3,447 acres in the Upper Clark Fork River Basin in southwestern Montana. The property is designated as a High Arsenic Area due to previous smelting activity at the

nearby Anaconda Smelter, requiring permanent vegetative cover to prevent erosion and to mitigate contamination of surface and ground water. BP works to protect and manage 2,400 acres of wetlands and 1,000 acres of grasslands to provide habitat for birds and mammals.

In the past, overgrazing of the area by livestock resulted in habitat degradation over time. Now, the volunteer employee team at BP protects the grasslands with fencing that excludes livestock from the habitat while allowing other wildlife to move freely to and from the property. Elimination of livestock grazing on the site has allowed for bird species to nest without disturbance; over 120 species of birds have been documented through seasonal bird surveys. Additionally, mammals such as white-tailed deer, mule deer, elk and moose are regularly seen on the site.

Yearly inventories of the habitat have demonstrated an increase in native plant cover since the program's inception. BP controls invasive and noxious plants like Canada thistle by periodically releasing weevils (a type of beetle that feeds on the thistle) in high-density





BP Dutchman grasslands overlooking Mount Powell in the Flint Creek Range, Montana.

thistle stands that have helped reduce coverage of this species in the site's grasslands.

Education is an important component of the program at BP Dutchman. Trails for community use include interpretive signage and bird checklists to facilitate visitor enjoyment and awareness of the site's habitats and wildlife. Additionally, partnerships with the

State of Montana have allowed for open sustainable hunting opportunities to the project the site, which was previously closed as private land.

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Invasive Species in Grasslands

Like in most ecosystems, invasive species pose a significant threat to grasslands around the world. Invasive species harm grasslands and wildlife by displacing native plants and degrading habitat quality. Fortunately, management techniques like prescribed fire,¹⁸ mowing¹⁹ and grazing²⁰ are good tools for controlling invasive species while also promoting the healthy growth of native grassland vegetation. Selective application of herbicide can also be useful for controlling invasive species that do not respond well to these other techniques.

Remnant grasslands protecting historical tracts of land

Remaining tracts of grasslands that have not been developed for crops, structures, roads, etc. are referred to as remnants, and they are vital to the many grassland-dependent species of mammals, birds, insects and microorganisms. These grassland areas can be important reservoirs of biodiversity,²¹ often containing higher levels of plant diversity than restored grasslands²² and serving as valuable reference ecosystems for restoration efforts. Corporate management to protect remnant grasslands can have a substantial impact on habitat and wildlife in the area.

Exelon and its subsidiary Commonwealth Edison (ComEd) protect remnant prairies and restore grasslands on adjacent parcels along rights-of-way, including the Buffalo Grove Prairie in northeastern Illinois.

At the Buffalo Grove Prairie, ComEd maintains 10 acres of electrical transmission ROW as native prairie habitat. This habitat is unique and ecologically valuable, containing the last remnant tracts of the Buffalo Grove Prairie, a historical prairie with high

biodiversity that was largely lost to development. The remnant prairie habitat contains over 275 native plant species, including numerous rare plants and sensitive species that are typically found only in undisturbed prairies.

ComEd uses a combination of tactics such as prescribed fire, targeted herbicide application and brush removal in order to control woody vegetation (that could interfere with transmission lines) and invasive species like purple loosestrife (that could degrade the prairie). The seeds of native prairie vegetation are also collected and sown on-site to further promote the establishment of native species. In addition to ComEd employees and contractors, a dedicated group of community volunteers called the Buffalo Grove Prairie Guardians are involved in many of these stewardship activities.

Annual habitat monitoring uses transects, meander surveys and pollinator habitat assessments to evaluate diversity and habitat quality of the plant community. The information gathered is then used to inform an adaptive management plan for the next year.



Sky blue aster are some of the native species found at ComEd's Buffalo Grove Prairie site.

The Buffalo Grove Prairie is one of more than 30 locations participating in ComEd's Prairie Initiative, which aims to restore and preserve native prairie habitat. Locations are selected from the more than 43,000 miles of electrical transmission ROWs in northern Illinois, based on criteria such as their proximity to existing prairie remnants or preserves. The selected locations often have tracts of remnant prairie occurring on-site as well. The initiative is part of ComEd's long-term commitment to conserve, restore and enhance the environment through ecosystem management.

WHC-CERTIFIED SINCE 2007

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A call to action for corporate landowners

The case studies highlighted in this white paper demonstrate that corporate landscapes of all types and sizes are suitable for restoring and managing native grassland habitat. From large-scale landscapes like utility rights-of-way and ranches, to smaller-scale roadsides and lawn replacements, there are a variety of possibilities for companies to conserve this valuable habitat type.

Third-party recognition, such as WHC Conservation Certification®, can be beneficial to companies in managing risk, communicating outcomes and meeting biodiversity goals. The WHC standard is designed to provide tangible data on a company's conservation and education activities that go above and beyond compliance. This helps companies demonstrate a long-term commitment to quality habitat for wildlife, conservation education and community outreach initiatives.

Corporate landowners can engage in the following actions to manage meaningful conservation activities on grassland habitats:

- Download the [WHC Grasslands Project Guidance](#) for information on how to design a

meaningful conservation project, and strategies to help achieve stronger outcomes.

- Evaluate the property for potential locations for grassland creation such as lawns, old fields, rights-of-way and roadsides; assess the size and condition of existing grassland habitats on-site.
- Seek partnerships and consult with local experts for advice and assistance with the design, implementation, maintenance and monitoring of a grasslands project.
- Review regional conservation plans to identify priorities for grassland restoration and management, and determine how on-site grassland activities could be aligned with these regional goals.
- Share your story of a successful grasslands stewardship project by seeking WHC Conservation Certification. Through the WHC Grasslands theme, WHC Conservation Certification recognizes and incentivizes voluntary conservation activities to protect, restore or maintain native grassland communities.

Endnotes

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Download WHC Project Guidances at
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Thank you to Ontario Power Generation for underwriting the production of this publication.

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WHC can help support a wide spectrum of conservation activities from the design and planning, to the implementation and management of a program. We do so through a framework that connects business drivers, stakeholder and community relations, and ROI to positive environmental and conservation education outcomes. For more information, please contact us at whcconsulting@wildlifehc.org.

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