



## PINELANDS PRESERVATION ALLIANCE

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### Sent Via Email

February 24, 2014

Mr. Jim Moran, Administrator  
Stafford Municipal Building  
260 E. Bay Avenue  
Stafford Township, New Jersey 08050

Kevin Appelget  
Green Acres Program  
Bureau of Legal Services and Stewardship  
Mail Code 501-01, Box 420  
Trenton, New Jersey 08625-0420

**Re: Amended Stafford Township Parkland/Grassland diversion, Block 25, Lot 39,  
Stafford Township, Docket No. A-002316-10T4**

Dear Mr. Moran and Mr. Appelget:

These comments are submitted by the Pinelands Preservation Alliance (PPA), the New Jersey Conservation Foundation (NJCF) and the New Jersey Environmental Lobby in response to the December 11, 2014 Stafford Township Application for Amendment to Approval of New Jersey Department of Environmental Protection Under Jersey Green Acres Program for Major Diversion and for Limited Release of Conservation Restrictions, Lease of Stafford Township Landfill for Solar Energy Facilities.

The land proposed for diversion was preserved through a conservation deed restriction, as required by the Memorandum of Agreement entered between the New Jersey Pinelands Commission, Stafford Township and the Ocean County Board of Chosen Freeholders, dated June 2006. Stafford Township recorded the conservation deed restriction on December 11, 2006. Moreover, the area in question has been grassland and threatened and endangered species habitat for 30 years or more. Prior to the proper closure of the landfill, this site had been maintained with grasses since Stafford Township stopped accepting solid waste at the landfill in 1982. PPA and NJCF have previously submitted documentation to the Department and the Pinelands Commission demonstrating that the grassland area is breeding and foraging habitat for threatened and endangered species of birds, and the consultant for Walters Group, the proposed beneficiary of the diversion, has now conceded this fact.

The Department has already correctly determined that the land cannot be developed as proposed by the Township's chosen contractor, Walters Group or one of its affiliates, unless the development meets the legal requirements for a "major diversion" under Green Acres rules, as explained in the letter dated August 20, 2010, from Amy Cradic to James Moran.

In its filings in the appeal of the original diversion actions, I/M/O Certificate of the Department of Environmental Protection, Docket No. A-002316-10, the Department has stated that the proposed development would constitute a "major diversion" that requires, among other elements to justify such a diversion, that Stafford Township "replace the lands with lands of equal or greater fair market value and of reasonably equivalent size, quality, location, and usefulness for recreation and conservation purposes ...." Notice of Motion for an Extension of Time for Temporary Remand Proceedings, dated July 3, 2013, p. 7-8, quoting the Garden State Preservation Trust Act (hereafter, the Green Acres Act), N.J.S.A. 13:8C-32(b)(1).

Our objective is to defend the integrity of public conservation lands through the application of the Green Acres statutes and diversion rules, which are well-designed to ensure conservation lands are respected, and the various ways in which local governments acquire conservation lands retain the public's confidence. The amended Stafford Park diversion application would violate the Green Acres Act and regulations, compromise the integrity of public conservation lands, and undermine public's confidence in government's will to protect publicly-owned open spaces where business or other interests not related to conservation, recreation, and natural resource protection seek to exploit those lands.

We submit that the application does not meet the legal requirements for a diversion in several critical respects:

1. The stated objectives to be achieved by the proposed development do not meet the threshold requirements for a diversion.
2. The applicant's proposed compensation does not meet the requirements of the Green Acres Act and diversion regulations because it is of "reasonably equivalent size, quality, location, and usefulness for recreation and conservation purposes."
3. The proposed development will cause irreversible adverse impacts to threatened and endangered birds and to their critical breeding and foraging habitats.
4. The applicant's "alternatives analysis" is not sufficient to demonstrate the lack of alternatives to the diversion.

**1. The stated objectives to be achieved by the proposed development do not meet the threshold requirements for a diversion**

The Green Acres regulations provide that a diversion may only be approved if the proposed development (a) fulfill a compelling public need by mitigating a hazard to the public health, safety or welfare; (b) yield a significant public benefit by improving the delivery of essential services to the public; or (c) provide an exceptional recreational and/or conservation benefit. N.J.A.C. 7:36-26.1(d).1. To meet the standard for "compelling public need," the project must "mitigate[e] a hazard to the public health, safety or welfare." N.J.A.C. 7:36-26.1(d).1.i. To meet the "significant public benefit" standard, the project must "improve[e] the delivery by the

local government unit ... of essential services to the public or to a segment of the public having a special need ....” N.J.A.C. 7:36-26.1(d)1.ii.

The amended application makes no mention of these requirements and provides no demonstration that these threshold criteria are met by the proposed diversion or potential development of the solar energy facility on which the diversion is based. Accordingly, the application fails at this threshold level.

In fact, the amended application completely undermines any case that the diversion could meet these threshold criteria by stating that there are no definitive plans to build a solar facility on the diverted land. The application explains that the facility would only be economical if solar energy credits (SRECs) provided a far greater subsidy than the market provides at their current price. All the applicant can say is that “there are many reasons to believe such a project will be viable in the future.” The speculative possibility that a development may be economically viable, and may be built, at some indeterminate time in the future is not a legitimate or permissible ground to grant a major diversion.

Even if the solar development were feasible today, the application does not identify any hazard to the public health, safety or welfare that the diversion will mitigate, nor does the applicant try to argue that the diversion is necessary for Stafford Township to provide any essential service that it does not currently provide, or even that Stafford Township has any duty to provide electricity to the PJM grid. The application is based instead on the desire of a township and a developer to use dedicated open space to generate income, and that is not a valid reason to divert protected open space or modify a conservation deed restriction to allow the land to be developed.

## **2. The applicant’s proposed compensation does not begin to meet the legal standards**

First, it is important to recognize that the standards governing compensation lands for a major diversion found in the regulations at N.J.A.C. 7:36-26.10(d) apply to the present case, even though Stafford proposes to enter a long-term, renewal lease rather than to sell the land outright. This point is shown by:

- (a) The Department concedes that replacement land is required for the proposed diversion, even though the diversion is via lease. The diversion regulations state that “Replacement land proposed by the applicant as compensation for a major disposal or diversion of parkland *shall meet the following requirements*” of N.J.A.C. 7:36-26.10(d) (emphasis added). There is no exception made for replacement land in the case of a long-term lease. Once it is accepted that replacement land is required by the Green Acres Act, then this land must meet the requirements of the Department’s duly adopted regulations.
- (b) The regulations provide the Department’s specific application of the broad statutory language requiring the local government to provide replacement land of “reasonably equivalent size, quality, location, and usefulness for recreation and conservation purposes.” There are no exceptions to the specific requirements set out in the regulations, nor any alternative set of rules specifying how an applicant meets the statutory requirements. So the statutory mandate cannot mean the set of detailed,

objective criteria set out at N.J.A.C. 7:36-26.10(d) for some major diversions, and something qualitatively different for others. There is one coherent set of regulations that expressly covers “[r]eplacement land proposed by the applicant for a major ... diversion.”

- (c) The applicant concedes this point in the amended application at p. 10, where it seeks to demonstrate that the replacement land meets a selection of the requirements of N.J.A.C. 7:36-26.10(d). The applicant is highly selective in its discussion of the requirements of subsection (d), choosing simply to ignore key subsections its proposal cannot meet, but the application clearly concedes that these requirements apply.

Second, the proposed replacement lands fail to meet the requirement that they be of “reasonably equivalent size, quality, location, and usefulness for recreation and conservation purposes.”

Under the detailed criteria of the regulations, the replacement land fails because it:

- (a) Represents at most an approximate 1:1 ratio of replacement land to diverted land, whereas N.J.A.C. 7:36-26.10(d)4 and Table 1 require that a diversion for a private sponsor (in this case, Walters Group for a commercial development) be at a ratio of 4:1.
- (b) Is not of equivalent quality or value for conservation purposes, as required by N.J.A.C. 7:36-26.10(d)6, because the replacement and diverted lands are of fundamentally different habitat types, and the replacement land cannot compensate for the loss of and damage to grassland bird habitat that would follow from the proposed diversion. Both lands have conservation values, but they are not reasonably equivalent on any measure.
- (c) Most of the replacement land should not qualify as counting towards compensation because, in contrast to the land proposed for diversion, it is protected by wetlands regulations and the designation of the stream there as a C1 water under the Surface Water Quality Standards. According to our calculations, only 5.94 acres of the replacement land is not already protected by these regulations.
- (d) The proposed replacement land has already been identified as protected in Stafford Township’s 2007 Master Plan, where the Land Use Plan Map lists both of the proposed replacement properties as Recreation/Open Space/Preservation. The Master Plan and map are binding in this respect because Manahawkin was designated as a Regional Center, and the Stafford Township - Planning and Implementation Agreement is part of the 2007 Master Plan. A second map within the Master Plan, entitled Recommended Zoning Changes: Section 1, details this area and shows the planning areas that were put in place. The replacement lands are designated as PA-5 Environmentally Sensitive Planning Area, areas with no development potential as an offset for Stafford's Center designation and increased development within the boundaries of the center.

Even if the Department incorrectly decides not to apply the requirements of N.J.A.C. 7:36-26.10(d), or to follow the applicant in picking and choosing which of those requirements to apply here, the proposed replacement land does not meet the Green Acres Act requirement that the replacement land be of “equivalent ... quality, location, and usefulness for ... conservation purposes” because it is of such different ecological character. The land proposed for diversion is grassland habitat, while the replacement land is entirely forested and much of it is wetlands. As such, they support different ecological communities and are not of “equivalent usefulness for ... conservation purposes.”

Furthermore, this land is deed-restricted in perpetuity and set aside as parkland because the technical committee consulted by the Pinelands Commission determined it would be valuable habitat for rare species. On this basis, the Commission determined that the permanent dedication of this land would assist the Commission in meeting the legal requirement that the Stafford Park Memorandum of Agreement, while waiving protections for rare species, would provide at least equivalent protection of Pinelands resources when compared to enforcing those protections. This fact cannot be ignored in reviewing the diversion request. The land used to be a landfill; then it was capped; and *now* it is permanently preserved parkland containing important habitat, including habitat for rare (e.g., special concern) and threatened species. The lease must include a compensatory mitigation plan for its impact on natural resource values. 7:36-25.14 (e)6. For more detail on the land’s natural resource values and the impact of the proposed development, *see* PPA and NJCF Letter to Commissioner Martin re proposed release of deed restriction, dated October 12, 2010 (attached and incorporated herein, pp. 3-4).

Since the applicant has failed to address these critical elements of the diversion rules, the Department cannot approve this proposal.

### **3. The proposed development will cause adverse impacts to threatened and endangered birds and to their critical breeding and foraging habitats.**

The diversion should also not be approved because the proposed solar energy facility development would cause drastic adverse impacts to the threatened and endangered bird species that breed and forage on the grassland site. The application includes a report from Herpetological Associates seeking to downplay or deny such impacts will occur, in part on the grounds that there will be grassy areas left between the solar panels and in part by stating the birds can just go elsewhere. The report, however, provides no detail account of the ecology of the species in question, no scientific references to support its conclusions, and indeed no persuasive argument.

We provide with these comments an expert report by Dr. Joseph Zurovchak, a Professor in Biology at Orange County Community College in Middletown, NY and an ecologist who specializes in ornithology. His report demonstrates that, once one considers the actual ecology of the species in question, “building the proposed solar array on this landfill grassland will render the existing habitat for grassland-obligate birds unsuitable. The solar panels will fundamentally alter the structure of this habitat such that it is no longer a clear and open grassland – the most basic requirement of grassland bird habitat. Good quality grassland habitats are difficult to find in New Jersey. Given the current, serious decline in grassland bird populations, grassland birds need as much assistance as possible in terms of preserving suitable grassland habitat.”

In addition, the Department represented to the Court in I/M/O Certificate of the Department of Environmental Protection, Docket No. A-002316-10, that it would “address the T&E issue raised by Appellants on remand,” and, because the Department had relied on the prior determination of the Pinelands Commission made before either agency knew of the rare birds using the site, the Department would seek a determination from the Commission on the validity of its prior determination that the development would not cause irreversible adverse impacts to any threatened or endangered species of wildlife. Notice of Motion for an Extension of Time for Temporary Remand Proceedings, dated July 3, 2013, p. 11, citing the certification of Ms. Yeany.

To our knowledge, neither the Department nor the Pinelands Commission has carried out such an examination of the T&E bird issue. It is not clear that the Pinelands Commission has taken any steps to evaluate the scientific information and how it affects the basis for its prior conclusions. Yet it is essential that the agencies address the issue, since, as the Department as stated, the Department’s prior diversion decision relied on a determination by the Pinelands Commission that simply did not address the bird habitat data.

Finally, we attach an Evaluation of Rare Grassland Bird Habitat Concerns Relating to the Proposed Diversion of Preserved Land for Construction of a Solar Energy Facility, dated February 24, 2014, by Dr. Amy Karpati and Dr. Emile DeVito. The report addresses claims made in the HA report submitted with the amended diversion application and concludes that (a) the landfill cover can be maintained in a manner consistent with the needs of the grassland birds found to be breeding and foraging on the site, (b) the proposed solar energy facility will not provide habitat of sufficient size and configuration to support the needs and ecology of the local grassland bird populations, and (c) there is no alternative suitable habitat in the area to support these local populations, and in any case the existence of such habitat elsewhere would be irrelevant to the question whether the habitat here may be degraded or destroyed.

**4. The applicant has not provided an “alternatives analysis”**

The applicant has not provided the alternatives analysis required by the Green Acres rules. Consequently, its application is not complete and we cannot comment on the validity of the required analysis.

Respectfully submitted:



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# STATEMENT ON ANTICIPATED ECOLOGICAL IMPACTS OF SOLAR PANEL ARRAY CONSTRUCTION

## AT THE STAFFORD LANDFILL CAP GRASSLAND

Submitted by Joseph Zurovchak, Ph.D.

February 18, 2014

**Dr. Joseph Zurovchak** is a Professor in Biology at Orange County Community College in Middletown, NY and an ecologist who specializes in ornithology. He has conducted numerous bird surveys and research within New Jersey and New York:

Conducted bird surveys in Sussex County, NJ, for New Jersey Endangered and Nongame Species program as paid consultant: Summer '04, '02

Conducted survey of harriers in Meadowlands, NJ, for National Resource Defense Council as paid consultant: Summer '02

May 1998 - May 1999: Research Fellow, Wildlife Conservation Society. Organized and implemented comprehensive avian survey of Orange Co., NY. Drafted resulting document: Zurovchak, J. G. 1999. Breeding birds, land use impacts, and conservation needs of the Wallkill Valley, Orange County, New York. Metropolitan Conservation Alliance, Wildlife Conservation Society.

Sept. - Nov., 1997: part-time employee, Hackensack Meadowlands Development Corporation. Assisted in censusing/monitoring wetland avifauna in Hackensack Meadowlands, NJ.

May - June, 1996, 1997: consultant, Wildlife Conservation Society. Assisted in surveying and monitoring avifauna as part of grassland management project at Floyd Bennett Field, Long Island, New York.

May 1996 - Feb. 1997: part-time employee, TAMS Environmental Consulting Service. Assisted in censusing/monitoring wetland avifauna in Hackensack Meadowlands, NJ.

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I am writing at the request of the Pinelands Preservation Alliance and the New Jersey Conservation Foundation regarding the proposal to build a 1,030 panel solar array on the Stafford Landfill Cap Grassland (Fig. 1) and its anticipated impacts on local populations of grassland bird species. It is my expert opinion that construction of this solar array will have significant adverse impacts on the grassland bird species currently utilizing this grassland habitat.

Grasshopper Sparrow (*Ammodramus savannarum*), a grassland bird species designated by the State of New Jersey as a Threatened species, and Eastern Meadowlark (*Sturnella magna*), a grassland bird species designated by the State of New Jersey as a species of Special Concern, have been observed to be breeding on the Stafford landfill property as cited in the DeVito et al. report of July 2012 and confirmed by the Herpetological Associates, Inc. (HA) report dated November 4, 2013. DeVito et al. also cite utilization of the landfill grassland habitat by American Kestrel (*Falco sparverius*, Threatened), Horned Lark (*Eremophila alpestris*, Threatened), and Spotted Sandpiper (*Actitis macularia*, Special Concern). HA states that the landfill portion of the Stafford Business Park property is habitat for Grasshopper Sparrow and Eastern Meadowlark but argues that it is not critical habitat for these species and that the "proposed solar project will not have an irreversible adverse impact on the local population of these species."

I disagree with this conclusion and instead believe that the installation of a solar array on this property will negatively impact these local populations of grassland birds, particularly Grasshopper Sparrow and Eastern Meadowlark, for the following reasons:

- Grassland birds require open habitat vistas, with few to no trees or vertical structures. This allows for greater safety as aerial predators can be observed and watched in flight. Vertical structures would provide perches where potential predators can hide, out-of-view. Solar panels are likely to be perceived as vertical structures akin to shrubs/trees, which will alter the birds' perception of habitat suitability.
- Grassland birds make many foraging flights each day, just above the ground surface to search for insects. The solar panels would present significant physical obstacles to this critical foraging behavior.
- Grassland bird nests are seldom if ever found near grassland edges. This is likely predator avoidance behavior. HA considers approximately 70-ft wide linear strips of grassland edge as suitable habitat for breeding and foraging, but life history research on these grassland birds indicates that they do not utilize narrow patches of grassed areas. In New Jersey, they are seldom if ever recorded breeding in grassed utility corridors/powerline cuts that are often as wide as 75-100 feet. Likewise, the 20-ft wide strips of grass between solar panel rows will not provide quality habitat for these birds because they are narrow and surrounded by vertical structures. Grasshopper Sparrows, in particular, will not likely nest among the panels.
- Even though the panels sit atop only 34% of the grassland habitat (the physical footprint of the panels would total 9.5 acres across the 28-acre solar array project area), the negative ecological impact of the panels – devaluing the grassland habitat by fragmenting the remaining 18.5 acres into linear strips – would be significant across the entire site, leaving no quality habitat on the landfill. This degradation will cause the birds to either completely abandon the site, or attempt to breed in poor quality habitat, which would likely result in few young being successfully produced.
- The contiguous, unfragmented grassland habitat at this site (Fig. 2) that is currently being utilized as critical nesting habitat by Grasshopper Sparrows is approximately 10.9 hectares, or 27 acres. Although the average territory size of a Grasshopper Sparrow pair is relatively small – less than 2 hectares (5 acres) – the Grasshopper Sparrow is an area-sensitive species. Breeding territories are more likely to be present in larger grassland habitat patches than in small, isolated patches (Dechant et al. 2002). Helzer and Jelinski (1999) showed that Grasshopper Sparrows can be expected to occur in suitable grassland habitat of 10.9 hectares (27.0 acres) about 50% of the time. In addition, they showed that habitat patches configured with low perimeter to area ratios (circles, squares, wide rectangles) are much more likely to be occupied than patches of the same size with high perimeter-area ratios (long, linear strips and thin rectangles). The current habitat being utilized by Grasshopper Sparrows at the Stafford landfill has a low perimeter to area ratio (0.0147) (Fig. 3). Thus, the expectation that this site would be utilized is about 70% (see Figure 4, the current conditions at Green Acres diversion site in question are plotted as a green dot on the graph taken from Helzer and Jelinski [1999]). If the solar panels were to be built, the strips of grassland habitat remaining between the panels would all have perimeter-area ratios close to 0.5, and the incidence of grasshopper sparrows utilizing the site would fall from 70% (green dot in Figure 4) to 0% (so low as to be "off the chart" in Figure 4, but plotted as a red dot at the closest displayed value of 0.050). This expectation is supported by the fact that no Grasshopper Sparrows (nor grassland birds of any kind) have been observed or heard utilizing the grass strips between the existing solar panels.
- It is not likely that any grassland bird species will actually utilize the fragmented strips of grassland habitat if the solar panels are built; these local populations would then cease to exist. However, if any grassland bird species attempts to establish territories in the remaining edges and strips of grassland at this site, as asserted in the HA report, the site will function as nothing more than a local population sink (a literal drain on the regional



population), where adult birds die from predation, or no longer produce enough offspring to maintain the current, regional population.

My professional experience with grassland bird species leads me to conclude that building the proposed solar array on this landfill grassland will render the existing habitat for grassland-obligate birds unsuitable. The solar panels will fundamentally alter the structure of this habitat such that it is no longer a clear and open grassland – the most basic requirement of grassland bird habitat. Good quality grassland habitats are difficult to find in New Jersey. Given the current, serious decline in grassland bird populations, grassland birds need as much assistance as possible in terms of preserving suitable grassland habitat.

Thank you for considering my contribution to this matter.

Sincerely,

A handwritten signature in blue ink that reads "Dr. Joseph D. Zurovchak". The signature is written in a cursive style and is set against a light green rectangular background.

Joseph Zurovchak, Ph.D.

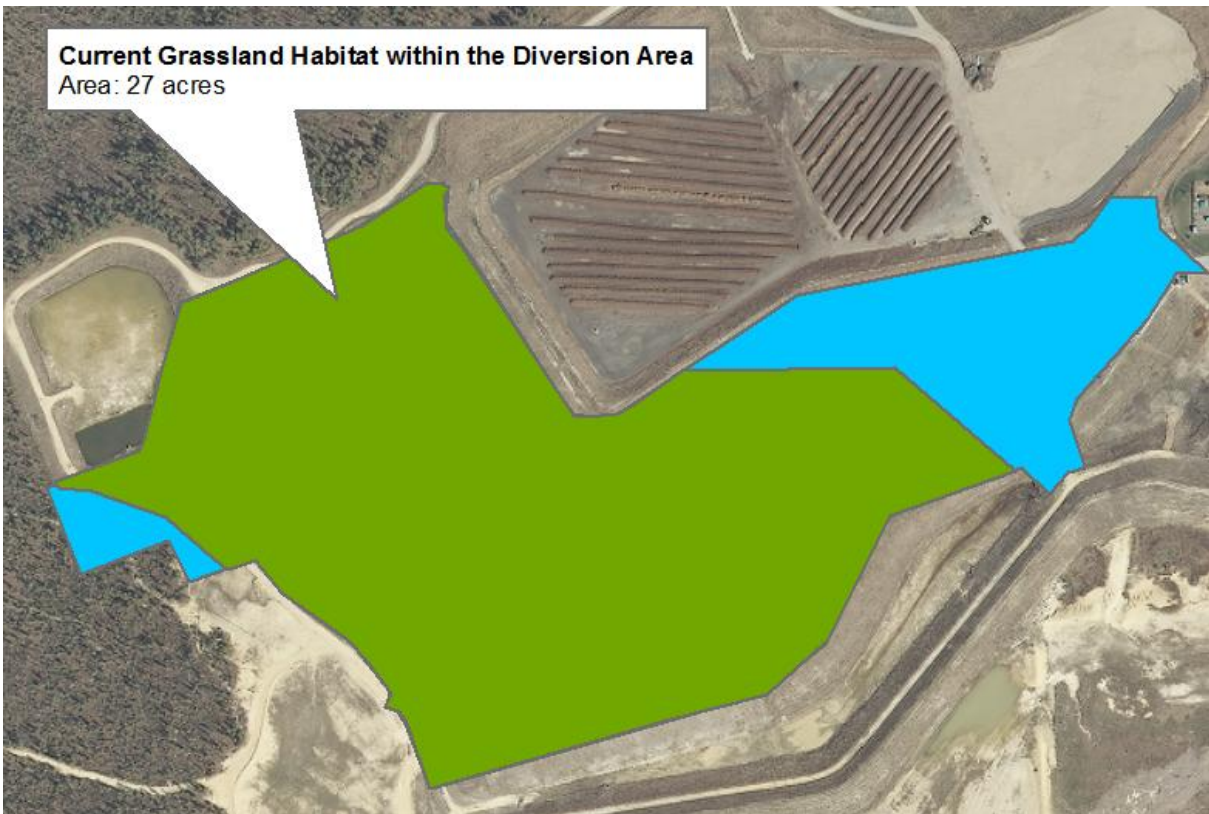
**References:**

Dechant, J.A., M. L. Sondreal, D.H. Johnson, L.D. Igl, C.M. Goldade, M.P. Nenneman, and B.R. Euliss. 2002. Effects of management practices on grassland birds: grasshopper sparrow. USGS Northern Prairie Wildlife Research Center, Paper 147.

Helzer, C.J. and D.E. Jelinski. 1999. The relative importance of patch area and perimeter-area ratio to grassland breeding birds. *Ecological Applications* 9: 1448-1458.



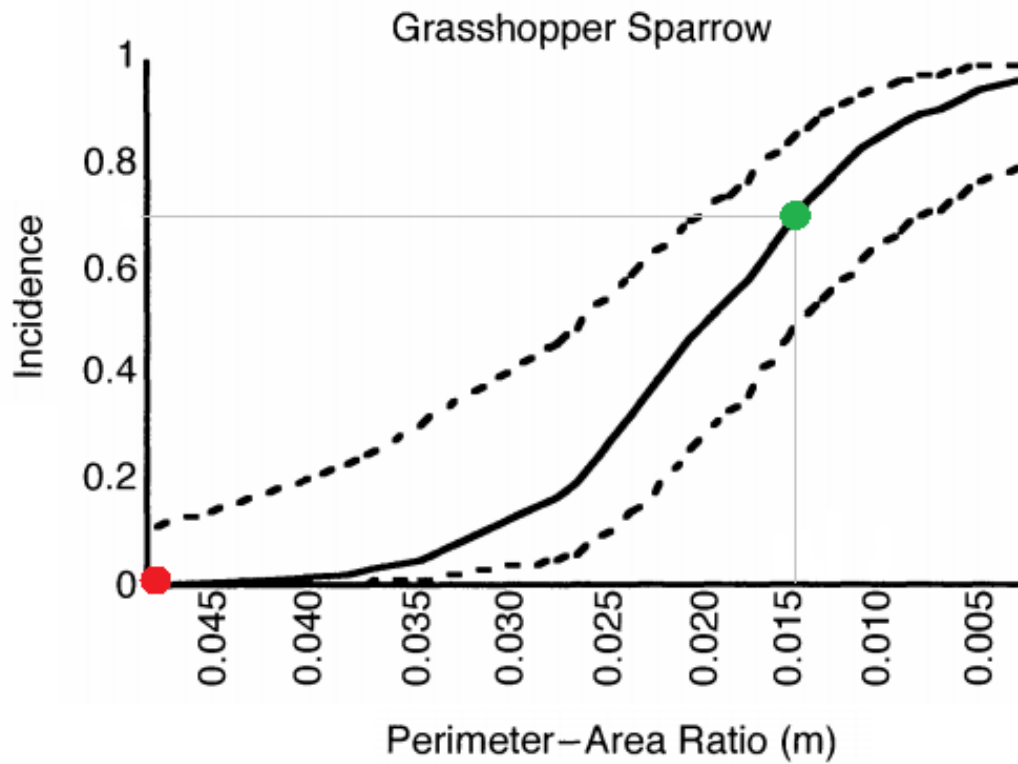
**Figure 1.** Proposed Green Acres Diversion Area (polygon drawn to fit Exhibit A of the Stafford Township Green Acres Amendment Application).



**Figure 2.** Current grassland habitat within the Diversion Area (excludes existing solar panels and woodlands).



**Figure 3.** Current grassland habitat area and representative area remaining between solar panel rows for comparison of perimeter-area ratios. The representative area is typical of what would be left as suitable grassed areas between panels across the Diversion Area.



**Figure 4.** Incidence curve for grasshopper sparrow in relation to Perimeter-Aare Ratio. Solid line represents probability of occurrence at a particular perimeter-area ratio value; dashed lines represent 95% confidence intervals. **Green dot** represents current condition of the grassland habitat within the proposed diversion area. **Red dot** represents closest approximation to current condition of grassed strips between solar panel rows. Adapted from Helzer and Jelinski (1999).

## Evaluation of Rare Grassland Bird Habitat Concerns Relating to the Proposed Diversion of Preserved Land for Construction of a Solar Energy Facility

February 24, 2014

We are submitting this report in support of the comments of the Pinelands Preservation Alliance (PPA), the New Jersey Conservation Foundation (NJCF) and the New Jersey Environmental Lobby on the amended application of Stafford Township for a diversion of preserved land at the former Stafford landfill site for purposes of installing a solar energy generation facility.

**Wildlife Use of Landfill Grassland Habitat.** Grasshopper sparrows (*Ammodramus savannarum*), a Threatened bird species in New Jersey, and Eastern Meadowlark (*Sturnella magna*), a species of Special Concern in New Jersey, are known to be breeding on the Stafford landfill grassland. (See Report on 5 Species of Threatened or Rare Birds at the Stafford Landfill Cap Grassland, by Dr. Emile Devito, Blaine Rothauser and Fred Virrazzi, 2012, attached to this letter.)

In the November 4, 2013 Herpetological Associates (HA) report, concerning whether or not the existing landfill grassland constitutes critical habitat for threatened species, an argument is put forth that even in the absence of the proposed solar development, required maintenance activities (mowing) on the landfill grassland will degrade the habitat value. HA argues that required mowing may at times occur with sufficient frequency to be inconsistent with the breeding behavior of the birds. They assert that under an intense mowing scenario, the grassland would not be suitable breeding habitat, and therefore should not be considered critical habitat. We strongly disagree. Maintenance of the landfill cap grassland requires only occasional mowing in order to maintain its integrity, so that no woody plants can become established and cause damage to the cap. Since 2007-8, when this grassland was planted, mowing has been rare. There is absolutely no need for aggressive, frequent mowing. The maintenance mowing allowed by the post-closure permit conditions to control woody vegetation and aesthetics would never need to be conducted during the grasshopper sparrow breeding season from March through July. Throughout New Jersey, managed grassland bird habitats are mowed from August through February, always outside of the birds' breeding season, to improve the quality of critical breeding habitat and accomplish various landowner needs, and this beneficial mowing scenario is in keeping with the maintenance of the landfill cap. In fact, since all parties are fully aware of the presence of these breeding birds, including Stafford Township, the NJ Department of Environmental Protection, the Pinelands Commission, and Walters Group Inc., purposefully and unnecessarily mowing the site during the breeding season (March through July) would constitute willful take of a threatened species, since eggs, nestlings, or fledglings of grasshopper sparrow are known to be present and cannot fly to escape a mower.

HA also argues that since PPA aided in choosing the native grass seed mixtures to plant on the landfill, that the habitat quality of the landfill cap was "inadvertently" elevated to be more suitable to colonization by the threatened bird species. It must be noted that the landfill cap was designated as perpetual open space by the settlement agreement of 2006, and that PPA's participation in helping to choose suitable native grass species to prevent erosion and offer excellent habitat quality was agreed to by all parties, and within the agreed upon purposes contained in the perpetual open space designation of the landfill cap, to provide useful open space and wildlife habitat values in exchange for the loss of similar values elsewhere in the

Stafford Business Park Development. The attempt to create excellent, permanent open space habitat on top of the landfill cap was not *inadvertent*. It was purposeful, and it was also a justification for PPA and NJCF to choose to enter into the settlement agreement in 2006.

**Diversion Area and Impact on Wildlife.** The area of the Green Acres diversion under consideration is 33.85 acres (Figure 1). Approximately 32 acres had been planted as grassland habitat. In 2012, approximately one acre was forest and about 3.5 acres had already been converted to a solar array. Therefore, in 2012, about 29 acres of this 33.85 Green Acres Diversion application area was being used as critical breeding territory and safe foraging habitat in close proximity to nesting locations by threatened and special concern grassland bird species.

At project completion there would be 1,030 solar panels. The HA report calculates that the total physical area of these panels will cover 9.5 acres within the 28 acres designated as the solar array project area. According to these numbers, 18.5 acres would be left as grass strips -- rows 20 feet in width in between the rows of panels. Additionally, about 4 acres of grassed area will remain outside of the solar panel project area but within the Green Acres diversion (i.e., within ditches and along edges), and another 20.4 acres of narrow strips and edges of grassed area would remain on the landfill, but outside of the Green Acres diversion area.

HA predicts that the remaining fragmented and linear strips of grassed area will continue to serve as habitat for these grassland birds. We strongly disagree. It is well-documented that rare grassland birds prefer large, wide, open, grassland areas devoid of vertical structures. Grassland birds do not nest within edges and narrow grassed patches, to avoid predators capable of rapid ambush initiated from a nearby motionless perch, hidden in adjacent forests or structures in trees, hedgerows, and developed areas. A grassed area is not automatically habitat for grassland birds simply because it has grass; its area, configuration, and context within the local adjacent landscape are critical components of its habitat suitability.

No evidence that threatened or special concern grassland birds species are utilizing the narrow grassy rows between the existing 3.5 acres of solar panels has been presented. The 2012 DeVito et al. report (cited above) documented threatened grassland bird use in the existing open grassland area; no threatened grassland birds were observed or heard within the existing solar panel area. The November 2013 HA report, which claims that grassy rows between solar panels will be useful habitat for grassland birds, presents no observational evidence that the grassland birds acknowledged to be present in the large, flat grasslands are utilizing the already existing solar panel area. Thus, there is no physical evidence from observations of the existing solar panels at the site, to back up the fundamental assertion in the HA report, that 18.5 acres of grassed rows between panels will remain or become useful to these grassland species.

Nor does the HA report cite any scientific literature or reports of experience elsewhere to support the premise that the species in question will use this area for breeding and foraging after solar panels are installed. The report of Dr. Joseph Zurovchak on the Anticipated Ecological Impacts Of Solar Panel Array Construction at the Stafford Landfill Cap Grassland submitted with this report demonstrates that the proposed solar energy facility is not consistent with the needs, habits and ecology of the grassland birds using the site.

If the Green Acres diversion is approved and the solar project is built to completion, there will remain only about 4 acres of grassland strips within the diversion area but outside the solar array project area, and none of these grassland strips will be more than 75 feet wide. There is no evidence from any habitat in New Jersey – farms, powerline cuts, highway medians, and the like

– that isolated grassy strips of 75 feet wide or less are ever successfully utilized for breeding by threatened grassland bird species.

The HA report asserts that approximately 42.9 acres of grassland will remain available atop the landfill as breeding and/or foraging habitat for the grasshopper sparrow and eastern meadowlark even after the full installation of the solar array. We have already refuted the claim that 18.5 acres of this habitat between solar panels and another 4 acres of narrow strips within the Green Acres diversion area will contain any value to threatened grassland species. This leaves approximately 20.4 acres of grassland strips and linear patches distributed along the perimeter of the landfill area but not part of the Green Acres diversion.

HA claims that these 20.4 acres (Figure 1) will remain as suitable habitat. First, even if these acres were to be suitable habitat, it is irrelevant, because they are not part of the Green Acres land being proposed for diversion. Second, the configuration of these patches and strips of grass, scattered between roads, fences, the composting facility, and the solar array are narrow and subject to the same factors (structures, roads, edges, etc.) which render habitat useless for rare grassland birds. No observational evidence has been presented that the rare and threatened grassland bird species, currently breeding on the preserved, wide, flat grassland area on the landfill cap, are utilizing even an insignificant portion of this other 20.4 acres of grassland outside of the diversion area.

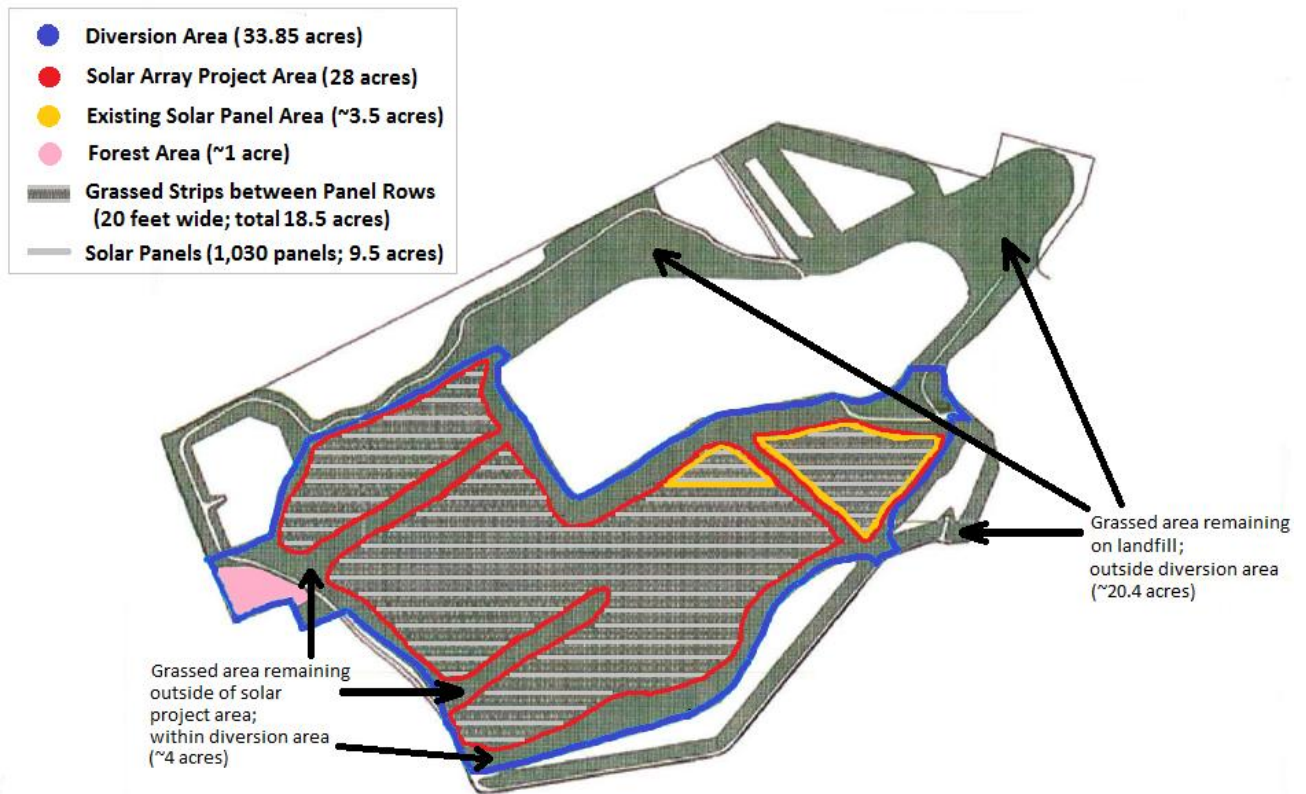
The 42.9 acres of supposed remaining habitat therefore consists entirely of 20ft-wide grassed strips between solar panel rows, narrow linear ditches and edges, and approximately 20.4 acres of currently unused grassed strips along the perimeters of the landfill property outside of the diversion area. Upon installation of the full solar array, no large areas of open grassland absent of vertical structure (solar panels) will remain, resulting in an entirely different habitat from the open interior grassland that currently exists and is being utilized by rare and threatened grassland birds. (Figure 1) This 42.9 acres of remaining strips of grassy habitat will be useless to breeding populations of rare grassland species, and the breeding population currently present will assuredly disappear from the site.

HA asserts that other grassland bird habitat occurs in Ocean County and more generally in southern New Jersey, and that the Stafford landfill Green Acres diversion habitat should not be considered critical, because there is potential breeding habitat available elsewhere. This assertion counters the fundamental element in the Pinelands Comprehensive Management Plan and sound conservation practice that requires protection of habitats critical to the survival of local populations of a threatened or endangered species. This breeding population of grassland birds, specifically the grasshopper sparrows, represents the entire local population. In fact, there is no other suitable habitat nearby on New Jersey's Outer Coastal Plain, according the NJDEP Endangered and Non-Game Species Program Landscape data for grassland habitat (see Figure 2 below). Small populations of grassland birds exist in Fort Dix and Lakehurst, both approximately 22 miles away, and the bulk of the threatened and endangered grassland bird regional population is found even farther to the west on the Inner Coastal Plain of New Jersey.

If the habitats utilized by the birds that colonized this site, and have been documented to return to breed here for each of the last few years, are diminished in quality by a solar array to the point of being useless to grasshopper sparrows, this threatened bird species is likely to disappear as a breeding species from all of southern Ocean County south of Lakehurst. The very reason that species are classified as threatened or endangered is that the size and frequency of

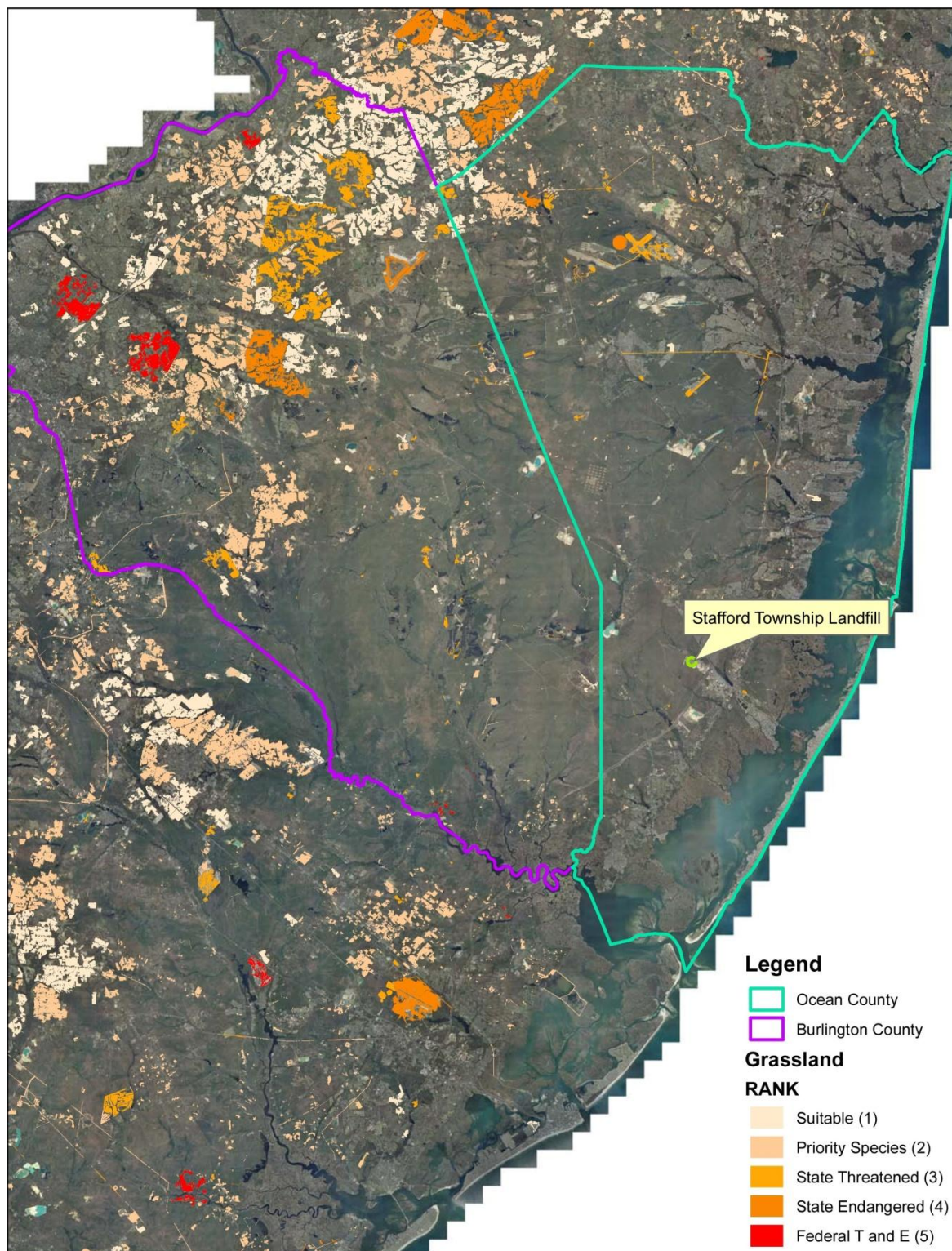
occupied habitat patches is both low and diminishing – leading to possible extirpation from a wide area. It is incorrect and biologically unsupportable to assert that the complete sacrifice of a local population of a diminishing species has no impact upon the risk of loss of the regional population. Species ranked as stable can tolerate losses of portions of local or regional populations; rare species cannot avoid increased risk of extirpation as local populations are lost.

This local breeding population of threatened Grasshopper Sparrow and local breeding population of special concern Eastern Meadowlark, occurring on land that was preserved in perpetuity as a grassy landfill cover and required to be maintained as grassland indefinitely, allows for co-existence between the needs of the grassland birds and the need to ensure that the landfill cap is maintained and functions properly.



**Figure 1. Stafford Landfill Diversion Area and associated grassed areas. Placement of solar panel rows is approximate and shown for illustrative purposes. Adapted from the November 2013 Herpetological Associates report.**





**Figure 2. Map showing grasslands in the Pinelands region and environs.** Source: NJ Department of Environmental Protection, Landscape Project 3.1 (2012).

Respectfully submitted,

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## **REPORT on 5 SPECIES of Threatened or Rare Birds at the Stafford Landfill Cap Grassland**

This report describes our findings during a visit to the area of the Stafford Landfill Cap Grassland (SLCG) on 24 July 2012 from 6:15 until 8:15 a.m. We approached the area from the village of Warren Grove, by travelling through the Stafford Forge Wildlife Management Area along Hay Road.

We observed 3 State of NJ Threatened and 2 State of NJ Species of Special Concern birds, as designated in New Jersey by the New Jersey Department of Environmental Protection Endangered and Non-Game Species Program (ENSP), utilizing the grassland habitat of the SLCG. Using digital cameras with telescopic lenses and highly sensitive audio recording equipment, we documented evidence of breeding and/or habitat use by each species, as follows:

### **Grasshopper Sparrow, *Ammodramus savannarum* - THREATENED**

We gathered indisputable positive evidence of successful breeding by Grasshopper Sparrows during 2012 within the grassland habitat of the SLCG. All three of us observed numerous adults and juveniles on the SLCG. Adults have successfully reared nestlings to the fledgling stage at the site in 2012, as evidenced by the numerous juvenile birds flying, foraging, and calling. Also, there were at least 3 territories still with territorial, singing adults that are in the process of rearing second broods. We collected photographs (the one shown below is a territorial singing adult perched atop one of the landfill cap vent pipes). Primary vocalization noted is described as two staccato notes followed by a long, insect-like buzz. Secondary calls were noted - contact trills and flight songs. The primary vocalization is proof positive that this colony is well established as the birds only perform it in the context of maintaining pair bonds throughout the breeding season (Smith, R. L. 1959. The Songs of the Grasshopper Sparrow. Wilson Bull. 71:141-152.). We also collected audio of the singing Grasshopper Sparrows, as well as video of family groups of adult and juvenile Grasshopper Sparrows foraging and flying among the grasses and other herbaceous plants.



Adult Grasshopper Sparrow, *Ammodramus savannarum*, singing from a landfill cap vent pipe in the grassland.  
Approx 7:30 AM, July 24, 2012

**American Kestrel, *Falco sperverius*: THREATENED:**

An adult female American Kestrel was observed hunting in flight immediately over the grassland habitat of the SLCG at approximately 6:45 AM by all three of us. The small falcon left the immediate vicinity of the grassland and entered the recently-burned (wildfire in May 2007) pitch pine / shrub oak forest of Stafford Wildlife Management Area to the south. Due to the abundance of dead trees immediately adjacent to the grassland of the SLCG, this forest within the publicly-owned Stafford Wildlife Management Area (WMA), within the Preservation Area of the Pinelands Comprehensive Management Plan, presents numerous potential nesting and roosting cavities, as well an abundance of resting places on dead branches, with excellent, unobstructed views of the surrounding feeding habitat of regenerating pine-oak forest. Every aspect of the kestrel's life history requirements was noted:

1. Common prey items (butterfly, grasshoppers, cicadas, passerine birds, small mammal burrows);
2. Tree Cavities along periphery of site;
3. Perching and foraging posts – abundant;
4. Large open foraging areas

At approximately 8 AM, probably the same female American Kestrel was seen by Virazzi, returning from the southern wooded area where it was last seen, and hunting along the western edge of the grassland. This female bird probably has an active nest cavity located very close by within the Stafford WMA forest, and uses the grassland habitat for foraging.

American Kestrels, colloquially known as Sparrow Hawks, often rely on small grassland birds as prey items, such as the Grasshopper Sparrows, Field sparrows, Chipping Sparrows, and other species found at the SLCG. Actions detrimental to the SLCG grassland bird community, especially the small sparrow species, such as the installation of a solar electric generating facility, will also adversely impact the NJ threatened American Kestrels that are nest in trees on Stafford WMA around the periphery of the grassland and spending considerable time within the grassland hunting for prey. The American Kestrel has suffered a drastic and steep decline in NJ during the last two decades, and was recently added to the Threatened species list by the state ENSP.

**Eastern Meadowlark, *Sturnella magna*: SPECIAL CONCERN:**

We gathered indisputable positive evidence of successful breeding by Eastern Meadowlark during 2012 within the grassland habitat of the SLCG. All three of us observed numerous adults and juveniles, a total of about 8 birds in what appeared to be 2 family groups on the SLCG. Adults have successfully reared nestlings to the fledgling stage at the site in 2012, as evidenced by the numerous juvenile birds flying, foraging, and calling. Also, there were at least 2 territories still with territorial, singing adult males that are in the process of attempting to rear second broods of young. These two males were identified by via their plaintive, flutelike whistle calls. Several other Eastern meadowlarks were producing vocalizations commonly issued by both sexes of adults and immature birds. Since male meadowlarks are polygamous, this infers a small population of 2 males, each with 2 females with some fledged immature birds.

We collected photographs (the one shown below is a territorial singing adult perched atop one of the landfill cap vent pipes). We also collected audio of the singing territorial adult Meadowlarks, as well as call notes from members of the actively foraging family groups. We also collected video of family groups of adult and juvenile meadowlarks foraging and flying among the grasses and other herbaceous plants.



Adult Eastern Meadowlark, *Sturnella magna*, singing from a landfill cap vent pipe in the grassland.

Approx 7:00 AM, July 24, 2012

**Horned Lark, *Eremophila alpestris*: THREATENED:**

Virrazzi detected the territorial song of an adult Horned Lark along the eastern edge of the SLCG. The bird was at too great a distance to be observed visually or photographed, but the song is unique and diagnostic. Horned Larks have been observed during the breeding season at the Stafford Landfill site for many years, and they were reported as breeding at the site in the August 10, 2010 report of Herpetological Associates regarding this grassland habitat. (Report of Herpetological Associates, titled *Evaluation of the Proposed Solar Panels on Native Wildlife at Stafford Park Landfill Site in Stafford Township, Ocean County, New Jersey – HA File Number 2006.19-SP, dated August 10, 2010*).

Our observation supports the conclusion of Herpetological Associates that the Horned Lark is a breeding species at the SLCG, as the habitat remains suitable and appropriate and a territorial song was detected.

**Spotted Sandpiper, *Actitis macularia*: SPECIAL CONCERN:**

All 3 of us observed multiple individuals of Spotted Sandpiper in the detention basins and along the wet, low, drainage ditches that traverse the grassland habitat on the SLCG. Although it is likely that the Spotted Sandpiper was a breeding species in 2012 at the SLCG, it is possible that the birds observed were migratory individuals, as the southbound sandpiper migration begins is underway by late July. Blaine Rothauer used a portable calling device in order to assess the context in which the birds were utilizing the site. The fact that an individual spotted sandpiper immediately responded to its own territorial call is strong suggestive evidence that the birds have fidelity to the area for purposes of breeding. Songs are used in sexual circumstances, in advertising and defending territories, and in maintaining pair

bonds. The SLCG, with its mix of detention ponds, wet ditches, and upland grass habitat, is suitable breeding habitat for the Spotted Sandpiper.



Spotted Sandpiper at Detention Pond on the SW corner of the SLCG

Close-up of same Spotted Sandpiper

In summary, the Stafford Landfill Cap Grassland (SLCG) was found to compare favorably to the premiere grassland bird habitat site in the entire Atlantic coastal region of southern NJ (The Lakehurst Naval Air Base Grassland). Species **diversity** and population **densities** of rare (Threatened and Special Concern) birds per unit area, as ranked by the State of New Jersey Endangered and Non-Game Species Program, are compatible with breeding sites known to be critical and essential to rare grassland bird species conservation in New Jersey.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Emile DeVito".

Emile DeVito, Ph.D.

A handwritten signature in cursive script, appearing to read "Blaine Rothausen".

Blaine Rothausen

A handwritten signature in cursive script, appearing to read "Fred Virrazzi".

Fred Virrazzi

**Credentials of Experts Preparing this Report:**

**Emile DeVito, Ph.D.**

Manager of Science and Stewardship, NJ Conservation Foundation, 23 years

Member, New Jersey Endangered and Non-Game Species Advisory Committee

*Recognized as an expert on the birds of New Jersey by the New Jersey Department of Environmental Protection*

*Endangered and Non-Game Species Advisory Committee; has participated in the Delphi Process every time since the inception of the Delphi ranking program in the 1990s.*

Ph.D., Ecology, 1988, Univ. of Wisconsin.

Thesis topic and location: Bird community structure and vegetation patterns in the NJ Pine Barrens.

32 years experience studying birds, managing and restoring habitats for rare plant and animal species in New Jersey.

**Blaine Rothausen**

*Pertinent professional experience with grassland birds:*

1. Fish and Wildlife Great Swamp Nat. Wildlife Refuge - Bluebird nest box monitoring and data collection 1993/94;
2. Alpha Grassland Bird Survey (Alpha NJ) for Twp. of Alpha 2003 - 3 week analysis of grassland birds of 1,600 acres;
3. Grassland Bird Survey - Brooklake Country Club, Florham Park 2009;
4. Kestrel Box monitoring Conservation Management Area's - Florham Park - 2006- present;
5. Lakehurst Naval Base - Grassland Bird Monitoring and photographic assignment - Parachute Jump Zone - 2007-2011;
6. Grassland Bird Survey - Creamery Farm, Phil Harden Road – Fredon Twp., NJ. 2010;
7. Pilesgrove Twp. Grassland Bird Survey to update NRI - Joint EC Woodstown/Pilesgrove Twp. 2011;
8. Grassland Bird Survey - Sharkey's Landfill - Troy Meadows, Parsippany NJ -Wildlife Preserve, Inc. 2012;
9. As a professional wildlife photographer and conservation biologist, Mr. Rothauser has photographed and documented for the NJ ENSP grassland birds and many other rare animal taxa throughout the state of NJ - all T&E grassland birds have been photographed in a variety of habitats throughout NJ , for example as seen in the following photograph:

State Threatened Savannah Sparrow:



**Fred Virrazzi**

BA in Zoology, currently works for the federal government, and has had 11 years experience working for US Customs, identifying and intercepting a wide-array of diverse animal and plant taxa.

On the Executive Board of two conservation-centric NGOs, including National Biodiversity Parks, which owns a wetland and grassland preserve in Plumsted Twp., Ocean County, NJ.

Over thirty years of avian fieldwork experience, including:

Seven years as Supervisor for the 1,200 acre Lakehurst Naval Base Grassland Bird Project;

Four years as Lead Investigator under ESA and US National Park Service permits to study endangered avian species;

Holds numerous avian diversity identification records in NJ, recognized by ABA (American Birding Association) and NJAS (New Jersey Audubon Society);

Has been awarded top honors four times in NJAS' *World Series of Birding* competition

Has studied birds in 49 states, 4 continents and scores of countries