United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, New York 13045

May 21, 2021

New York State Office of Renewable Energy Siting
Empire State Plaza
240 State Street, P-1 South, J Dock
Albany, NY 12242

Dear Ladies and Gentlemen:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Permit for a Major Renewable Energy Facility, Docket Number 21-00026, dated March 15, 2021. The applicant, Heritage Wind, LLC, requests authorization from the New York State Office of Renewable Energy Siting (ORES) to construct and operate a wind energy project. The Heritage Wind project is located in the Town of Barre, Orleans County, New York.

The proposed project will consist of up to 33 wind turbines with a nameplate capacity of approximately 184 megawatts. Each turbine will be up to 675 feet (206 meters) tall from ground level to turbine blade tip. Power will be collected through approximately 37 miles of underground collection lines leading to a new substation and then transmitted to the electricity grid by an approximately 500 feet long, 115 kilovolt overhead line. A second substation will be built at the interconnect location. Approximately 13 miles of new access roads will also be built along with two wind measurement towers, a 13-acre temporary construction staging area, a temporary concrete batch plant, and a 4,000 square foot operations facility. The project area encompasses over 5,800 acres of agriculture, forest, wetland and rural residential land use. The project is in close proximity to the Iroquois National Wildlife Refuge (INWR) and the state Oak Orchard and Tonawanda Wildlife Management Areas managed by the New York State Department of Environmental Conservation (NYSDEC). The closest proposed turbine to the INWR is less than 3 miles.

This response is submitted pursuant to, and in accordance with, provisions of the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d), Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq*.), and Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 703-712).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) prohibits the taking of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). Under the BGEPA, take includes "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb[1]" (16 U.S.C. §668c). BGEPA's implementing regulations at 50 CFR §22.26 provide a process whereby entities can pursue authorization to incidentally take eagles. The Service only grants those permit requests that satisfy all issuance criteria, including that the taking be "compatible with the preservation of bald eagles and golden eagles" (50 CFR §22.26(f)). Applying is a voluntary process; "the Service cannot require any entity to apply for an eagle take permit (except under legal settlement agreements)" (81 FR 91551; Dec. 16, 2016). However, unpermitted take may result in civil or criminal penalties (16 U.S.C. §668a-b).

The Service generally recognizes that wind energy development can affect eagles through collisions with wind turbines or, more indirectly, through disturbance. On April 26, 2013, the Service released the *Eagle Conservation Plan Guidance*: *Module 1 – Land-based Wind Energy* (ECPG; Version 2; USFWS 2013) to provide a framework for protecting eagles in wind energy development. This guidance helps wind energy developers assess potential risk to eagles from wind project operations and develop comprehensive avoidance, mitigation, and compensation strategies to reduce impact to local and regional eagle populations.

Effective implementation of the ECPG depends upon informed risk analysis. The ECPG advises that project proponents conduct pre-construction eagle use surveys to generate modeled estimates of annual eagle fatality rates. Appendix C of the ECPG provides guidance on designing and performing these surveys. Additionally, 50 CFR §22.26(d)(3)(ii) sets survey requirements for those projects seeking take authorization:

(A) Surveys must consist of point-based recordings of bald eagle and golden eagle flight activity (minutes of flight) within a three-dimensional cylindrical plot (the sample plot). The radius of the sample plot is 2,625 feet (ft) (800 meters (m)), and the height above ground level must be either 656 ft (200 m) or 82 ft (25 m) above the maximum blade reach, whichever is greater.
(B) The duration of the survey for each visit to each sample plot must be at least 1 hour.
(C) Sampling must include at least 12 hours per sample plot per year for 2 or more years. Each sample plot must be sampled at least once per month, and the survey start time for a sampling period must be selected randomly from daylight hours,[2] unless the conditions in paragraph 50 CFR §22.26 (d)(3)(ii)(F) apply.

[1] Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (50 CFR §22.3).
[2] Daylight hours are defined as the hours between sunrise and sunset.

(D) Sampling design must be spatially representative of the project footprint,[3] and spatial coverage of sample plots must include at least 30 percent of the project footprint. Sample plot locations must be determined randomly, unless the conditions in paragraph (d)(3)(ii)(F) of this section apply.

(E) The permit application package must contain the following:
  (1) Coordinates of each sample point in decimal degrees (specify projection/datum).
  (2) The radius and height of each sample plot.
  (3) The proportion of each three-dimensional sample plot that was observable from the sample point for each survey.
  (4) Dates, times, and weather conditions for each survey, to include the time surveys at each sample point began and ended.
  (5) Information for each survey on the number of eagles by species observed (both in flight and perched), and the amount of flight time (minutes) that each was in the sample plot area.
  (6) The number of proposed turbines and their specifications, including brand/model, rotor diameter, hub height, and maximum blade reach (height), or the range of possible options.
  (7) Coordinates of the proposed turbine locations in decimal degrees (specify projection/datum), including any alternate sites.

(F) Stratified-random sampling (a sample design that accounts for variation in eagle abundance by, for example, habitat, time of day, season) will often provide more robust, efficient sampling. Random sampling with respect to time of day, month, or project footprint can be waived if stratification is determined to be a preferable sampling strategy after consultation and approval in advance with the Service.

The Service strongly recommends that those projects sited within migration corridors or winter concentration areas increase survey effort (i.e. frequency and/or duration) during the relevant seasonal timeframes.

Additionally, the ECPG advises that project proponents conduct aerial surveys for eagle nests within the project area[4] prior to construction. See ECPG Appendix C and USFWS Updated Eagle Nest Survey Guidance (USFWS 2020a) for further details. To aid both design and implementation of aerial and pre-construction use surveys, the Service advises that project proponents consult with state wildlife agencies for data on known important eagle use areas[5].

Appendix II of the Avian Risk Assessment (December 2019) for the Project indicates that the proponent conducted eagle use surveys December 2016-November 2018 and that these surveys recorded 63 bald eagle sightings. The report does not translate sightings into eagle use minutes

[3] The project footprint is the minimum-convex polygon that encompasses the wind-project area inclusive of the hazardous area around all turbines and any associated utility infrastructure, roads, etc.

[4] Project area means the project footprint and a 2-mile perimeter.

[5] Important eagle-use area means an eagle nest, foraging area, or communal roost site that eagles rely on for breeding, sheltering, or feeding, and the landscape features surrounding such nest, foraging area, or roost site that are essential for the continued viability of the site for breeding, feeding, or sheltering eagles (50 CFR §22.3).

which are the basis for site-specific CRM take estimates, nor does the report indicate whether the proponent ran the Service's CRM with Service prior study data (priors) or what take estimates it may have found. Rather, the report concludes that the risk to bald eagles is "very low to zero" based upon no known nests within the project area, the reported number of known bald eagle mortalities at other wind facilities, and a general comparison of wind turbine collisions versus other sources of bald eagle mortality.

The Service would like to highlight several facts salient to the Project's future potential compliance with BGEPA. First, the studies, as presented in the Avian Risk Assessment for the Heritage Wind Project are not consistent with the Service's ECPG, as claimed on Pages 2, 7, and 11; As explained above, the ECPG advises that projects not only collect data on eagle use, but that use this data to predict eagle fatalities using the CRM, and decide whether to apply for an eagle incidental take permit based on the findings of these analyses. The report indicates that the project proponent has only completed Stages 1 and 2 out of 5 in the ECPG.

Second, the 2015 bald eagle mortality cited in the report is no longer the only known bald eagle mortality at wind projects in New York. The Service is now aware of six additional bald eagle mortalities at wind facilities in state. These seven total records represent *known* mortalities; more are likely to have occurred but escaped detection.

Third, while the Service is aware of the other anthropogenic sources of bald eagle mortality highlighted by the report, such as lead poisoning, the quadrupling of bald eagle populations in the Lower 48 and in the Atlantic Flyway between 2009 and 2018 (USFWS 2020b) indicates that these ongoing sources of mortality have not prevented a continued and robust recovery of the species. Rather, the Project's risk of take may have increased with the growing number of bald eagles on the landscape. Additionally, unpermitted take remains illegal under BGEPA, regardless of whether there are other forms of ongoing anthropogenic mortality in state or whether the species' population is increasing.

Fourth and last, bald eagles do not need to nest directly within a wind energy development project to be at risk of take. Bald eagles nesting in adjacent areas may also enter projects as part of foraging, territorial defense, or other behaviors and collide with turbines.

According to the Project's Net Conservation Benefit Plan, "the nearest known bald eagle nest is located approximately 2 miles southwest of proposed Facility components." The Service's ECPG states that projects are at high risk of taking eagles when nesting eagles are likely to pass through or use project footprints[6]. Per its most recent guidance (Updated Eagle Nest Survey Protocol; USFWS 2020a), the Service considers eagles nesting within 2 miles of projects as potentially subject to this form of exposure:

https://www.fws.gov/migratorybirds/pdf/management/EagleNestSurveyGuidanceUpdated.pdf

[6] The project footprint is the minimum-convex polygon that encompasses the wind-project area inclusive of the hazardous area around all turbines and any associated utility infrastructure, roads, etc.

Based on the proximity of this nearest nest, the known ranging behavior of breeding bald eagles and their young, and the density of bald eagle nesting territories in the surrounding area, we believe that the Project is at risk of taking eagles associated with this nest. Consequently, we advise that the proponent apply for a federal eagle incidental take permit if it is unable to re-site its turbines to beyond 2 miles of any known bald eagle nests.

The Project may face additional risk of bald eagle take from bald eagles unrelated to this nesting territory. To quantify this risk, we reiterate our previous recommendation that the proponent run the Service's CRM with Service model priors and use this information in developing an Eagle Conservation Plan as part of a permit application. Bald eagle-specific model priors (USFWS 2021) are now available for this purpose:

https://www.federalregister.gov/documents/2018/06/21/2018-13358/updated-collision-risk-model-priors-for-estimating-eagle-fatalities-at-wind-energy-facilities

https://www.fws.gov/migratorybirds/pdf/management/crmpriorsreport2018.pdf

The Service encourages the proponent to contact its Migratory Bird Permit Office for assistance in applying.

Lastly, we recommend that the reviewing authority inquire directly with the proponent whether they are aware of any previously undisclosed known or suspected bald eagle nests in or within 2 miles of the Project, including through any potential information gained outside formal survey effort.

Migratory Bird Treaty Act

The MBTA implements four treaties that provide for international study, coordination and protection of over 1000 species of migratory birds. The MBTA prohibits any taking, killing, possession, transportation and importation of migratory birds, their eggs, parts and nests without approval from the Service. To protect migratory birds, we encourage developers of existing and proposed wind energy projects to follow current Service recommendations on wind power siting and construction found in the *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines* (2012*)* found at http://www.fws.gov/ecological-services/energy-development/wind.html.

This document provides guidance on appropriately siting wind projects and measures to conserve fish and wildlife during the design, construction, and operation of these facilities. A central theme to our guidelines is proper siting of projects away from sensitive resources such as protected wildlife areas. The guidelines recommend siting projects away from wildlife concentration areas like refuges and unique habitat such as shorelines. In this regard, the proposed project does not conform to the guidelines as the project is sited close to the INWR and two other unique areas of habitat managed specifically for wildlife, where substantial investment

has been made for wildlife and the project is in conflict with the mission and purpose of these lands. These islands of unique habitat are specifically managed to attract and support wildlife. They are known birding hotspots which attract many visitors seeking to observe the concentration of birds in the wetland, field and forest habitats. Over 235 species have been observed (Ebird data 2021) at the refuge whereas surrounding areas have substantially less species recorded. Operating a wind energy project in such close proximity to these wildlife areas raises the risk for increased collision. While the project documents discuss causes of avian mortality from sources other than wind energy and compares the magnitude of the problem, our view is that wind projects should not justify the mortality as small but rather look for ways to minimize or avoid it altogether.

In the spring of 2013, the Service conducted research on migrating animals near the project site using mobile marine radar units which track flying animals similar to how weather events are monitored using Doppler radar (Rathbun et al. 2016). This effort was part of a larger study of avian and bat movement in and around the Great Lakes Region. Data from these studies show that birds generally follow land forms like shorelines and topographic features such as ridges during migration. Two units operated simultaneously and continuously at separate locations to provide a comparison between coastal sites along Lake Ontario and the inland site near INWR. Each unit was equipped with both a horizontal and vertical radar antennae. The unit stationed near INWR was located approximately 12 miles southeast of the refuge and 24 miles due south of Lake Ontario. The coastal sites were located in Niagara, Wayne and Jefferson Counties. The two radar units operated for a portion of the migration season at one location and then were moved to another site for the remainder of migration which encompassed March to June. Data gathered included flight passage rates and altitudes above ground. It is important to note that the study was conducted during one segment of the spring migration season and so the number of targets recorded over a full migration season would be higher than reported. The results indicate that although much migration follows the coast of large lakes, the inland site had greater flight passage rates and target density and lower flight altitudes compared to the three coastal sites.

Passage rates of biological targets and their altitudes were recorded at the study sites using horizontal radar (sweeps the landscape to detect targets in all directions). Of the four sites monitored, the equipment at the inland site, and closest to the INWR, recorded the highest mean nocturnal target passage rate. The mean rate was 818 targets per kilometer per hour compared to coastal site rates of 582, 732 and 555 t/km/hr. Considering the duration of migration and the volume of airspace sampled, these passage rates equate to millions of animals flying through the study area. It is also important to consider the direction of the targets as well. Migrants followed a southwest to northeast direction of travel at the site closest to the INWR. Therefore, if the migrants are using the refuge for diurnal rest and then ascend at night to continue migration they will be flying up and into the field of turbines. In other words, the alignment of the refuge, the turbines and the direction of the migration path potentially increases the risk for collision in the spring. The reverse of this alignment during fall migration could also potentially be problematic as targets look to descend through the turbines to the abundant areas of diverse habitat at the INWR. However, no data was collected during this time frame and therefore the potential risk is unknown. Other data such as weather patterns (passage of fronts, wind speed and direction,

visibility, etc.) and timing of migration (based upon time of year and continental scale weather events) will influence migration characteristics and are not easily predicted with limited data. These other data can also influence risk to migrants as well.

Migrant altitude was measured using vertical radar (a beam pointed straight up into the airspace). In general, migrant flight altitude was lowest at night at the inland site with a mean of 774 meters above ground compared to 992, 946 and 816m agl at the coastal sites. This data indicates that targets were lower to the ground when flying at night and peak target per hour densities were highest below 200 m which would fall within the rotor swept zone (see attached figure). Similarly, the altitude of migrants at dawn was lower than the other sites except one. Lower flight altitude, particularly at night, can increase target risk of collision. Further, if migrants are flying during inclement weather, poor visibility can increase risk and in some cases push migrants even lower altitudes and exasperate the risk.

Target density is another metric measured in this study. Using both horizontal and vertical data of migrants, the corrected density of the inland radar unit was much greater than the coastal station locations. This indicates that more targets were within the space of the rotor swept zone over the course of nocturnal migration also indicating potential higher collision risk.

The data indicated a pattern of dawn ascent to a greater degree than the coastal sites. This indicates that the habitat in and around the INWR provides valuable diurnal stopover habitat for migrants that rest and feed in the INWR and wildlife management areas after nocturnal flight. The study acknowledges this pattern and states these high levels of baseline activity may also indicate areas that could be at risk from renewable energy development. It is important to note that the data and analysis in this report considered smaller turbine heights and rotor swept zones than what is being proposed for the current project. Turbine blades which reach higher into the airspace and which cover much larger area during the rotation process are expected to increase the risk for collision. Therefore, given the data gathered, such as passage rate, direction of migration, target density within the rotor swept zone and the altitude of migrants in close proximity to the INWR and two state wildlife management areas, we view the proposed project site as an elevated risk to flying animals, especially the turbines closest to the important habitat. We consider the risk analysis completed for the project to be outdated and an unsubstantiated guess as to risk because it is based upon fewer and smaller turbine projects and does not consider site-specific flight data.

If the project proceeds, the Service recommends that the site be monitored for impacts to wildlife following construction and during turbine operation. A post-construction bat and bird mortality monitoring plan should be developed and provided for review. Proposals for conducting monitoring should be coordinated with both the Service and the NYSDEC to ensure they are comprehensive, accurate, and correctly timed. Information gained from post-construction monitoring will continue to aid the Service and project sponsors as we learn more about potential impacts, or lack thereof, to wildlife in the project area. Given the proposed location of the turbines to the northeast of the refuge, an important stopover site, and the direction of travel during spring migration, we would expect to see greater levels of mortality associated with

ascent during migration. Conversely, descent of biological targets during fall nocturnal migration from the north could be at greater risk when passing through the project area to land at INWR. Only adequate monitoring will answer these questions.

Monitoring should also be part of a strong adaptive management program for the project. We noted that the draft permit for the project does not contain any provisions for adaptive management. We recommend that project approval not be given until after the details of the post-construction monitoring plan and an adaptive management program have been reviewed by the Service and the NYSDEC.

Endangered Species Act

To obtain information on federally-listed threatened and endangered species, Heritage Wind used the Service's Information Planning and Consultation database. No species are known to occur in the project vicinity.

No further coordination with the Service is required pursuant to the ESA for this project. Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, please contact us for additional assistance. The most recent compilation of federally listed and proposed endangered and threatened species in New York is available for your information. Until the proposed projects are complete, we recommend that you check our website regularly to ensure that listed species presence/absence information for the proposed projects is current.*

This letter does not exempt the project proponent from obtaining approvals or permits that may be required by State or Federal agencies. Further, this letter does not convey any authorization for take[7] under the ESA or any other authorities. Any new information regarding the proposed project and the potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation.

Summary

The Service is concerned that this project does not conform to our recommendations in our wind energy guidelines. Further, the information provided by the project proponent does not meet the standards set forth under the ECPG. Accordingly, the risk assessment is deficient with regards to the BGEPA. Therefore, the project may face liability risk under this statute. Based upon the data collected by the Service and the close proximity to important and unique state and federal wildlife areas, we believe this project represents a high collision risk to wildlife. Data collected by the Service indicates this risk may be higher during migration. Our recommendation would be to site the project in an area of less risk. At a minimum, it is recommended that the 6 turbines

[7] Take is defined in section 3 of the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct.

closest to the INWR and state wildlife management area should be moved relative to these areas or removed from the project. We believe that the closer the turbines are to these unique biological habitats, the greater the impact is to species which frequent them. We recommend ORES deny the draft permit for the project and direct Heritage to design a project with less risk to wildlife.

We appreciate the opportunity to provide this project evaluation. Please contact Tim Sullivan at 607-753-9334 if there are any questions regarding this letter.

Sincerely,

For IAN DREW Digitally signed by IAN DREW Date: 2021.05.21 11:28:38 -04'00'

David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at: http://www.fws.gov/northeast/nyfo/es/section7.htm

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cc: NYSDEC, Albany, NY (B. Denoncour)
NYSDEC, Avon, NY (J. Landry)
USFWS, Hadley, MA (T. Wittig)

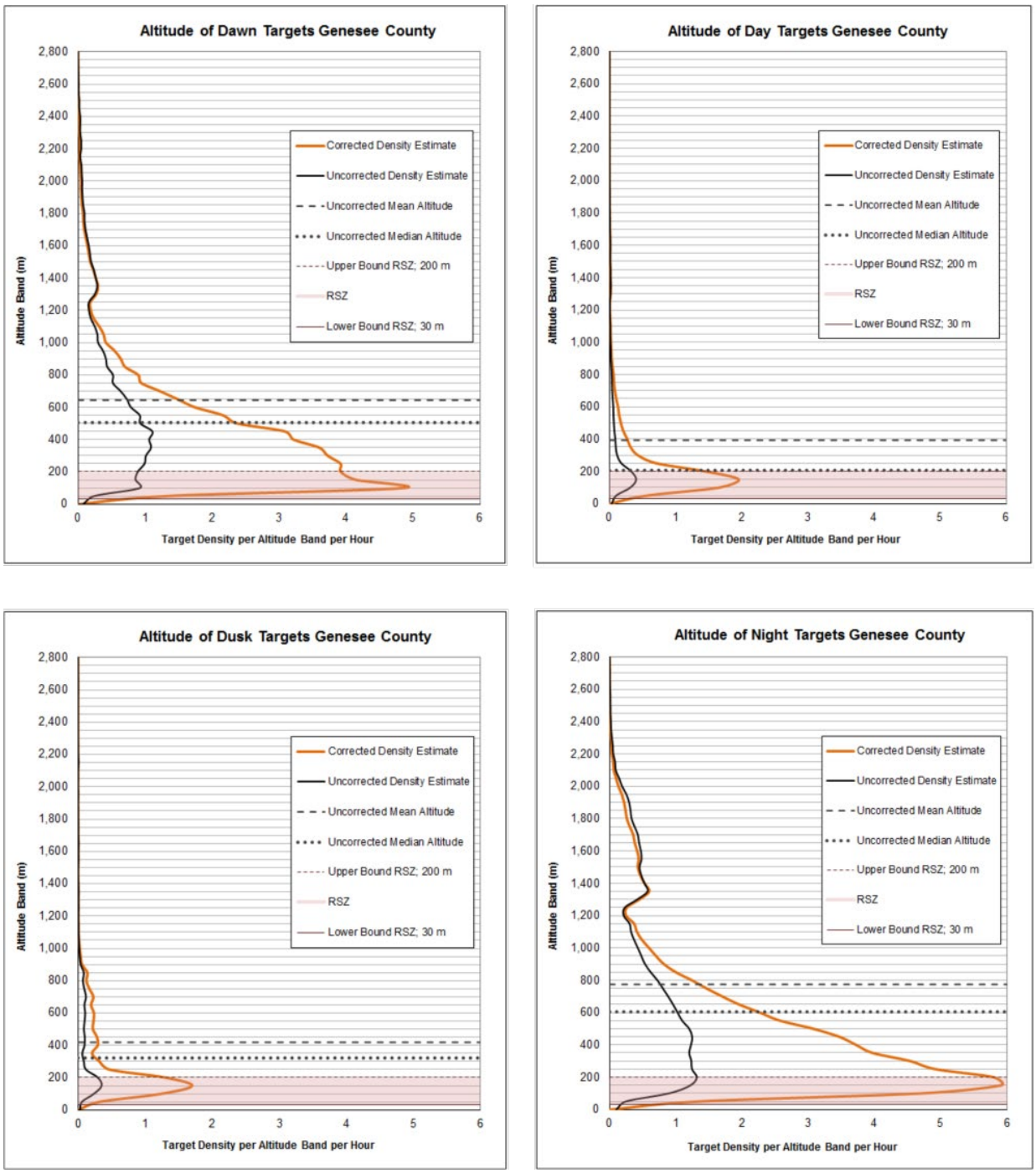

Figure 26. Altitude profiles of targets in Genesee County, New York. The corrected lines (orange) depict the target density (targets/1,000,000 m^3) per 50-m altitude band per hour after adjusting for the structure of the sample volume. The uncorrected lines (black) depict the target density per 50-m altitude band per hour assuming a uniform volume distribution (i.e., the volume of each band is equal to the total volume divided by the number of bands). The red band represents the rotor-swept zone (RSZ) from 30 to 200 m. The x-axis represents the target density (targets/1,000,000 m^3) per 50-m altitude band. The y-axis labels represent the top of each altitude band in meters.