

(Kepler and Kepler, 1973). The Puerto Rican Nightjar also occurs sparingly in other localities in the dry limestone forests of the southwest coast of Puerto Rico, from Guayanilla to El Combate. Recent records indicate the presence of this species in the hills north of Guayanilla Bay and the Susúa State Forest. In Susúa, Puerto Rican Nightjars occur primarily on the southern slopes, but can also be found in the mature lower cordillera forest at slightly higher elevations (USFWS, 1991). They are most common in the Guánica State Forest at elevations from sea level to about 700 feet (213 meters) above sea level.

The most recent surveys indicate stable populations of nightjars in the Guánica and Susúa State forests and the hills above Guayanilla. Recent estimates for all populations (Vilella, 1989) are 676 Puerto Rican Nightjars on 24,310 acres (9,838 hectares) distributed as follows: Guánica (347), Guayanilla-Peñuelas (188) and Susúa-Maricao (141).

Habitat Description

The Puerto Rican Nightjar is a predominantly understory bird of the dry southwestern forests (Kepler and Kepler, 1973). Seldom do they fly above the emergent trees, preferring to stay under the forest canopy. Potential Puerto Rican Nightjar habitat in southwestern Puerto Rico consists of mature undisturbed forests representative of the Subtropical Dry Forest Life Zone (Ewel and Whitmore, 1973), where the vegetation tends to form complete ground cover, and is almost entirely deciduous on most soils. Trees usually do not exceed 15 meters in height and their crowns are typically broad, spreading and flattened with sparse foliage.

Status of the Species

In 1970, the precarious situation of the Puerto Rican Nightjar leads the U.S. Fish and Wildlife Service (USFWS) to declare it an endangered species protecting it under the Endangered Species Act. Since then, the species have been managed in order to identify potential critical habitats for its recovery.

3. METHODOLOGY

The methodology was based on the point count bird census methods of Wunderle (1994) and adapted for the Puerto Rican Nightjar, the project site and time concern. The site was evaluated during daylight hours looking for current vegetative status as suitable habitat for the species and ease of accessibility during census time at dark.

Census was conducted during the Puerto Rican Nightjar activity peak hours at dusk (5:00-6:45 AM) and dawn (6:30-8:00 PM) during two consecutive days on March 2010, and along existing trails. A total of three trails were surveyed: two within the expansion areas (north and east existing landfill) and a third outside project boundaries, but nearby, as a control (southeast landfill). On each trail recorded playback was used to attract singing bird males (Wunderle, 1994). The recording song was played during five minutes while listening for a response for another five minutes. Any nightjar vocalization heard was annotated with its time, location and direction estimate. This was repeated for every sampling point.

The research team for this census was composed of:

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4. RESULTS

The Puerto Rican Nightjar was surveyed during two consecutive days at dusk and dawn. On the first day, the proposed landfill expansion areas were surveyed during daylight, looking for possible habitat for the species. Trails and accesses that could facilitate the night surveys were also identified at this time. It was determined to use three existing trails for the rapid movement between the areas during the night survey (see Figure 3). These trails were one for each expansion parcel and a third one to the south of the existing landfill as a control.

Day 1 (PM):

Three individuals were heard on the east expansion parcel. Two vocalizations occurred at 7:00PM. The first vocalization was heard closer to the survey point to the north of the parcel. Then a farther vocalization was heard to the southeast of the same point as a response to the first one. A third vocalization was heard to the southwest at 7:20PM far away from a second survey point on the same trail.

On the north expansion parcel the vocalization of three individuals was heard at 7:55PM. Two individuals were heard close to the southeast direction while a third individual was heard far away to the north.

On the control parcel, to the south of the existing landfill facilities, one vocalization was heard at 7:40PM far away on a northeast direction.

Day 2 (AM):

Only one individual was heard on the east expansion parcel. The vocalization occurred at 5:00AM. This vocalization was heard close to a southwest direction at 5:00AM far away from a second survey point on the same parcel. A second vocalization was heard to the

northeast at 5:20AM close to a second survey point on the same parcel. Then a farther vocalization was heard to the southeast of the same point as a response to the first one.

On the north expansion parcel the vocalization of one individual was heard at 6:00AM. No response was heard.

On the control parcel, to the south of the existing landfill facilities, over five vocalizations were heard to the west and a farther one to the east.

5. DISCUSSION

The study area comprises two parcels for a total of approximately 30 acres together. This area had been exposed to direct and indirect impacts from the existing landfill facilities. The vegetation on both parcels suggested that they had been deforested sometime during the past decades. Both parcels have existing trails and dirt roads associated to the landfill. Most of these dirt roads are existing accesses to a series of monitoring wells around the landfill. These trails were the ones used on this study during the night surveys. There are no reported potential habitats for this species within the overall Project area. The nearest documented occurrences of this species include Guánica State Forest, Punta Verraco, and the hills north of Highway PR-2 in Peñuelas-Guayanilla.

The control area is another trail to the south of the landfill located outside the proposed expansion limits. This corresponds to a vast extension of forested land that serves a buffer zone between the landfill and the western limit of the Guánica State Forest. This portion of land is well conserved with little or no impact to its existing flora or fauna. This area may serve as a corridor between the Guánica State Forest and the Guayanilla Hills, two of the best recognized habitat of the species. On this control area is where most of the Puerto Rican nightjar vocalizations were heard.

The vocalizations heard on the proposed expansion parcels at any given time where no more than two. Of this, one of them always was heard farther away, therefore it can be estimated that probably was a bird responding from outside the parcel.

It is known that the Puerto Rican Nightjar prefer well forested and low tree canopy areas as nesting sites. This species prefer nests on the ground below the shadows of low-lying dry forest trees. This species do not favored open or perturbed areas as nesting sites. These conditions are not clearly present on the proposed expansion parcels. So it should

not be expected to find a breeding pair nesting on the area. The detected singing individuals during our survey probably were flying by or foraging on the area.

6. CONCLUSION

From our survey we cannot estimate the exact population of the species in the area. But it can be concluded that the population density is very low in comparison to other documented areas outside the project area.

To minimize any possibility of actions taken against the species it is recommended that a monitoring protocol of the species be established at least during the clearing and grubbing phase of the project. This consists of a trained biologist that will survey the area, where there will be work to be done, looking for any individual of the species. In the event of sighting any species individual, appropriate measures should be taken to avoid any harm or potential impact to the species.

This study demonstrates that the population number for the species in the area is minimal and that the area is not a favorable nesting area. It can be concluded that the proposed project should not have a direct impact on the species or its preferred habitat on the area.

7. REFERENCES

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Appendices

Figures:

- Figure 1: Location and Topographic Map
- Figure 2: Aerial Photograph
- Figure 3: Survey Routes Location

Photographic Documentation

Figure 1: Location and Topographic Map

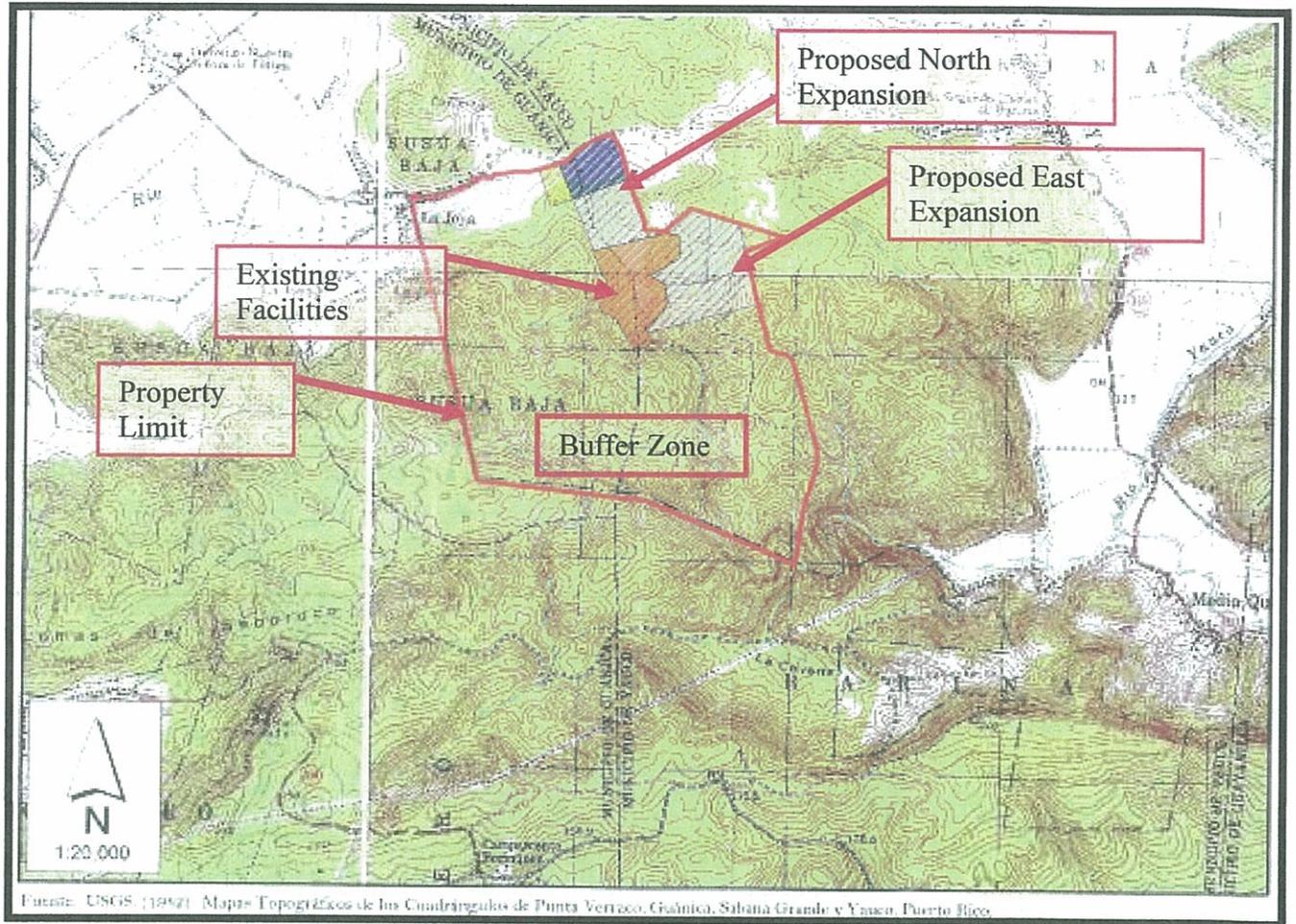


Figure 2: Aerial Photograph

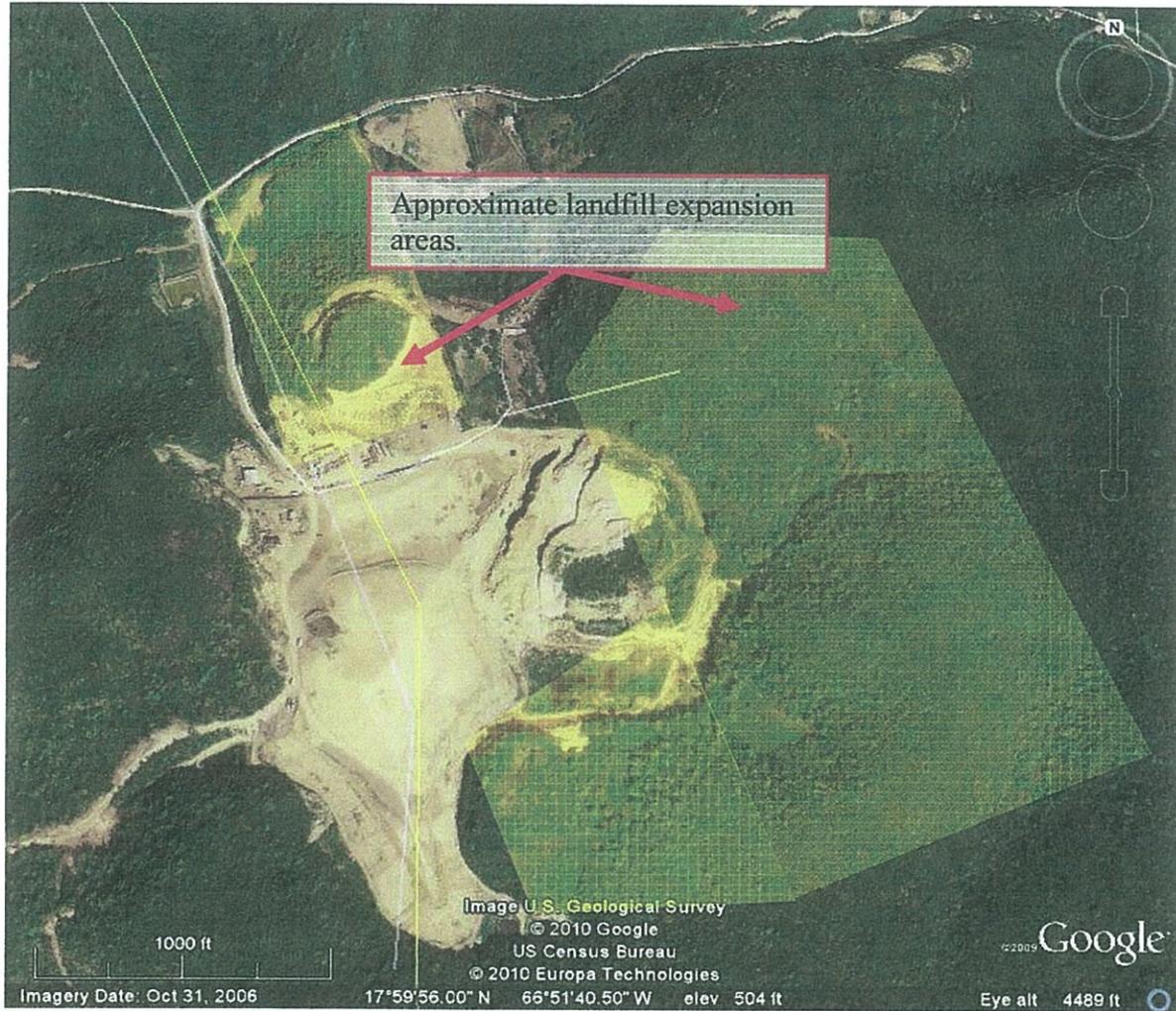
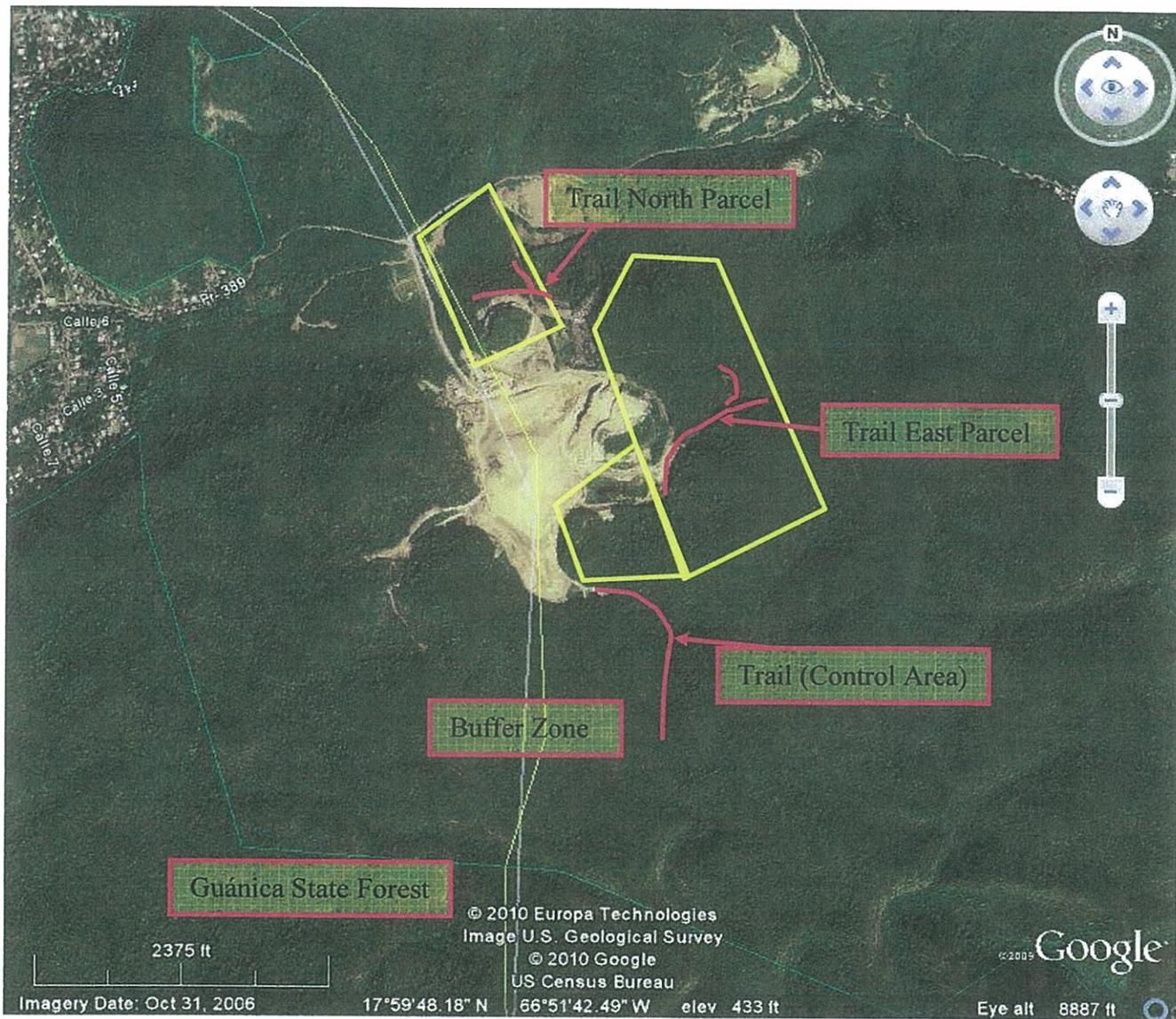


Figure 3: Survey Routes Location



Photographic Documentation



Photo 1: Partial view of the North Expansion Parcel area.



Photo 2: Panoramic view from the landfill to the south. At the end partial view of the buffer zone area.



Photo 3: Partial view of the dirt road on the East Parcel site.

Apéndice 17:

Estudio de Determinación Jurisdiccional de
Humedales