

PROJECT NAME

Breeding Passerine and Secretive Marsh Bird Surveys at Gateway National Recreation Area

SUBMITTED BY

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GOALS AND OBJECTIVES

The goal of this project is to develop baseline inventory data on the abundance and distribution and of several avian species breeding in Gateway National Recreation Area. Specifically, our objectives are to (1) determine abundance and distribution patterns of passerines and secretive marsh birds during the breeding season, (2) determine patterns of species diversity within particular species groups, and (3) investigate habitat and site differences that underlie avian abundance, distribution, and diversity patterns.

WORK PLAN1 - 15 May*Study Site Preparation*

- (1) Meet with park National Park Service Natural Resource staff to review point locations and determine if any important areas have been inadvertently overlooked. Secure site access and resolve any issues related to site access. Review data collection protocols.
- (2) Site visits to locate all survey points with GPS and determine accessibility. Survey points are not located in any areas classified as buildings/urban, pavement, or lawn according to 1976 landuse/landcover data provided by NPS). Point locations were randomly generated by using a 300 m grid overlaid onto landuse/landcover data (see Figures 1-5). Each potential survey point is centered in an individual 300 x 300 m grid cell. The number of potential survey points for each study site is shown in Table 1.
- (3) Where possible, points deemed inaccessible will be relocated while still maintaining a 300 m distance between adjacent points. Final survey point locations will be marked with a stake bearing a unique location identifier (e.g., SH01 for point #1 at the Sandy Hook Unit), and coordinates collected using a GPS.

16 May - 31 July*Data Collection*

- (1) Avian surveys will be conducted from each point location 2-3 times during the data collection period. When appropriate habitat for passerines and secretive marsh birds (e.g., emergent wetlands) occurs at the same sample point location, surveys will be conducted for each species guild on

separate days. The maximum count at each point will be used to estimate abundance and breeding density.

- (2) Typically, surveys will be begin at sunrise and continue for a maximum of five hours. Observers will conduct a 10-minute point count at each survey point, recording all landbird (i.e., passerines and allies) or solitary nesting waterbird species seen or heard. The 10-minute count will be divided into 3, 2, and 5-minute intervals. This will allow comparisons with other studies that have used these sampling intervals.
- (3) Observers will record, to the best of their ability, the species detected, and the distance and direction of detected birds from the survey location using a digital laser rangefinder and digital compass. At a minimum, observers will record the distance as discrete categories (e.g., 0-25 m, 26-50 m, 51-75 m, 76-100 m, > 100 m) from the survey point when the detected bird cannot be seen. Using a distance sampling protocol provides a means to assess detection probabilities that, when applied to abundance measures, generate better estimates of breeding density.
- (4) Several species of waterbirds are secretive, and thus, may not be surveyed effectively using the passive point count method previously described. To conduct surveys of these species, we will play tapes of their breeding and territorial vocalizations to elicit responses. During separate surveys (i.e., different than the surveys conducted for conspicuous species), taped calls will be played for 30 seconds, followed by a 30 second listening period. This sequence will be repeated 2-3 times for each species known or thought to occur in the park (see Table 2). Because some of these species also vocalize at dusk, we will attempt to conduct one survey during this period. As with passive point count surveys, observers will estimate, whenever possible, the distance to calling individuals using a digital laser rangefinder.

Data Entry

Through 15 August

- (1) Field data will be recorded on data forms provided to the technician. Data entry will begin during the survey period and we hope to complete this task before the end of the technicians tenure, which is approximately 15 August. We will strive for this so that technicians can help in data quality verification. All data entry and verification should be complete by mid September.

Data Analyses and Report Preparation

15 Sept - 31 December

- (1) Breeding bird density and diversity estimates will be generated and summarized from collected data and used to infer their relationship with land use/ land cover attributes in the various sections of the park. A draft

report will be prepared and submitted for review to the National Park Service, Northeast Coastal and Barrier Island Network. If necessary, revisions to the draft will be made and the final report submitted to satisfy New Jersey Audubon Society's obligations as stated in its cooperative agreement with the National Park Service.

Table 1. Total area and approximate number of potential survey points for units and sub units of Gateway National Recreation Area

<u>Unit/Sub Unit</u>	<u>Area (ha)^a</u>	<u>Survey points^b</u>
Jamica Bay/Breezy Point		
Jamaica Bay Wildlife Refuge	982	105
Floyd Bennett North ^c	477	51
Breezy Point	388	44
Staten Island	501	55
Sandy Hook	663	63

^aExcluding landuse/landcover patches identified as buildings/urban, pavement, or lawn

^bBased on all patches excluding those identified as buildings/urban, pavement, or lawn

^cAll NPS along the northern mainland coast of Jamaica Bay excluding Floyd Bennett Field

Table 2. Secretive marsh birds known or potentially may occur at Gateway National Recreation Area

Common Name	Scientific Name
Pied-bill Grebe	<i>Podilymbus podiceps</i>
Least Bittern	<i>Ixobrychus exilis</i>
Clapper Rail	<i>Rallus longirostris</i>
Virginia Rail	<i>Ixobrychus exilis</i>
Black Rail	<i>Laterallus jamaicensis</i>
Common Moorhen	<i>Gallinula chloropus</i>
American Coot	<i>Fulica americana</i>

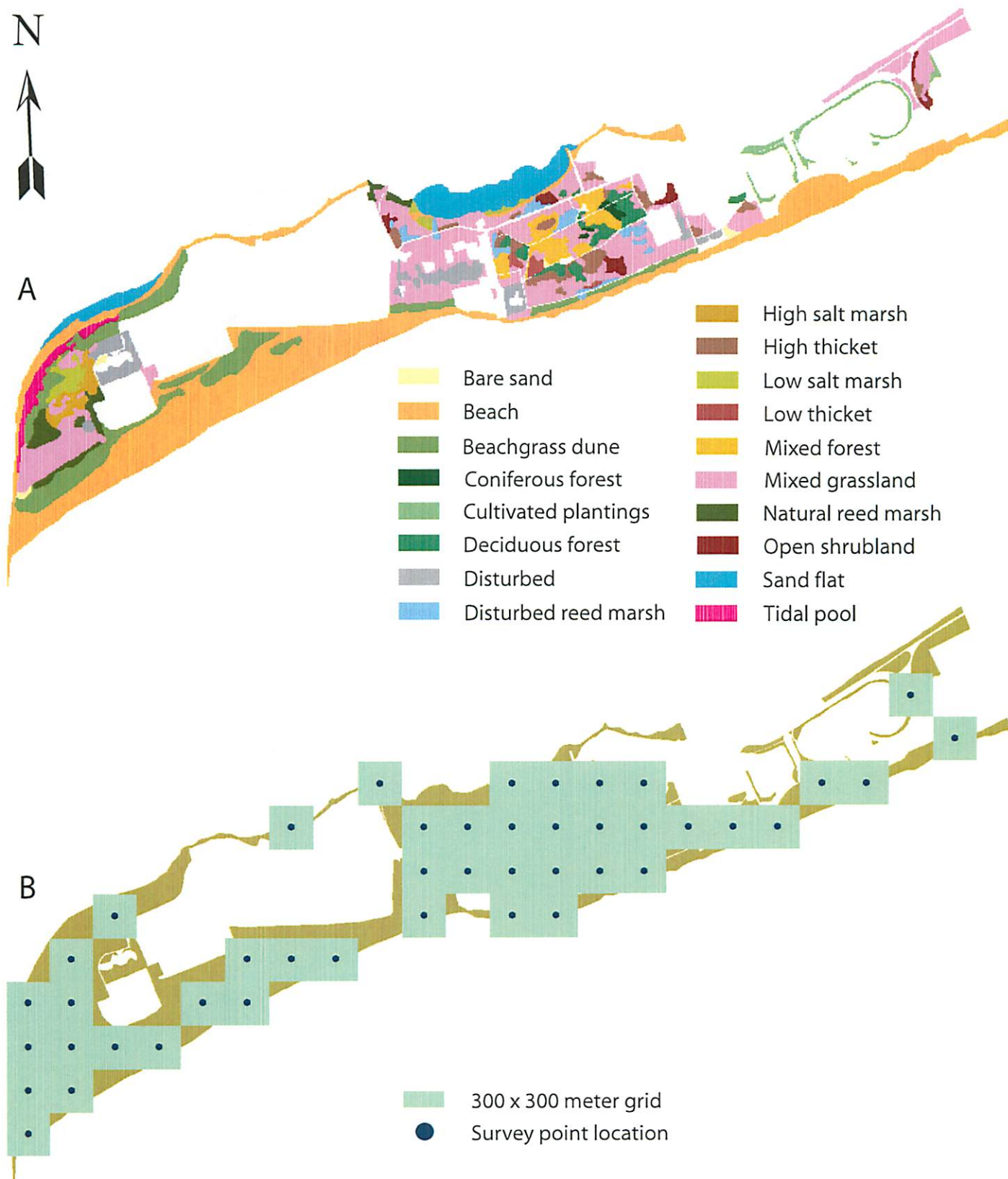
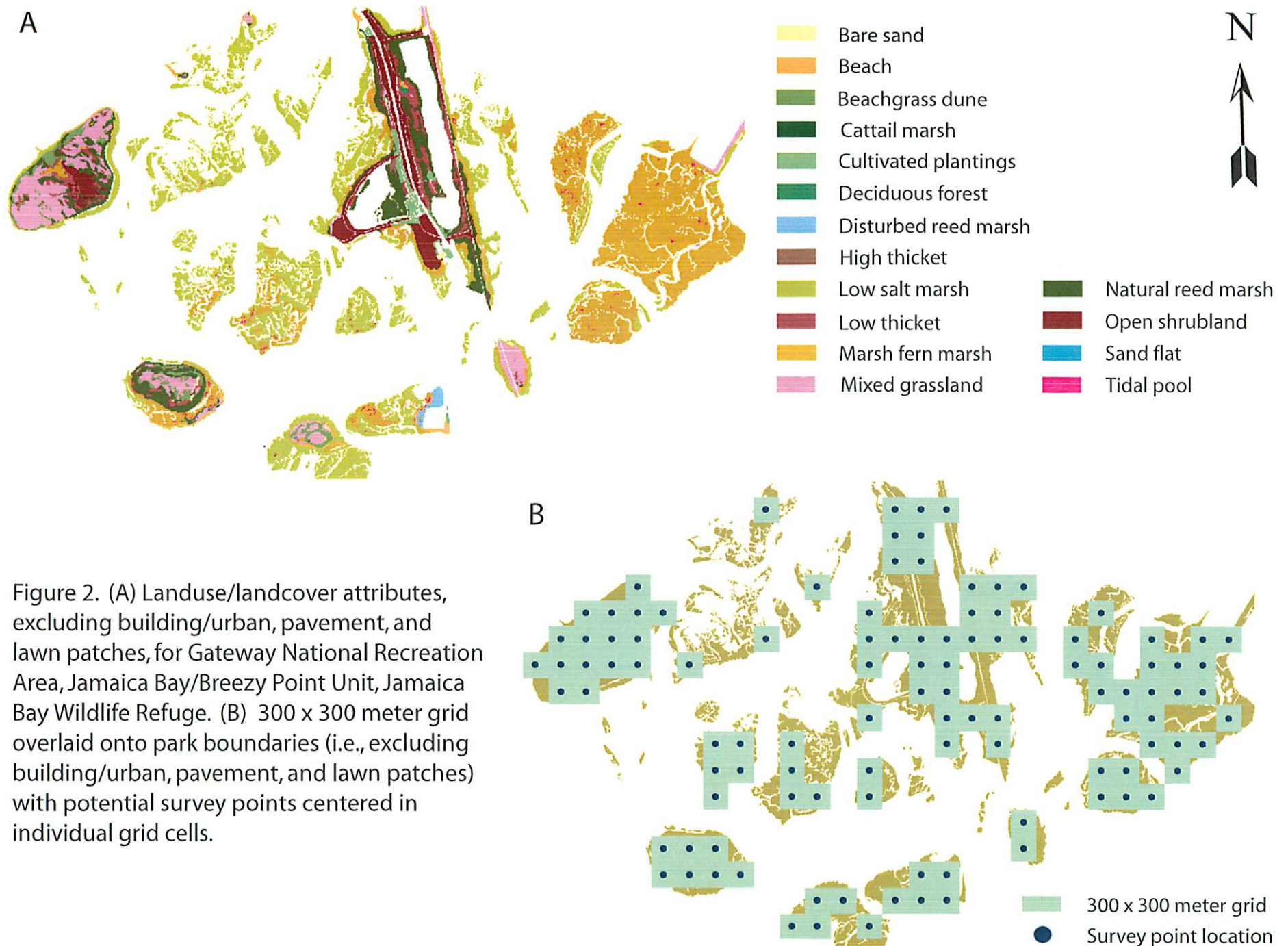


Figure 1. (A) Landuse/landcover attributes, excluding building/urban, pavement, and lawn patches, for Gateway National Recreation Area, Jamaica Bay/Breezy Point Unit, Breezy Point section. (B) 300 x 300 meter grid overlaid onto park boundaries (i.e., excluding building/urban, pavement, and lawn patches) with potential survey points centered on individual grid cells.



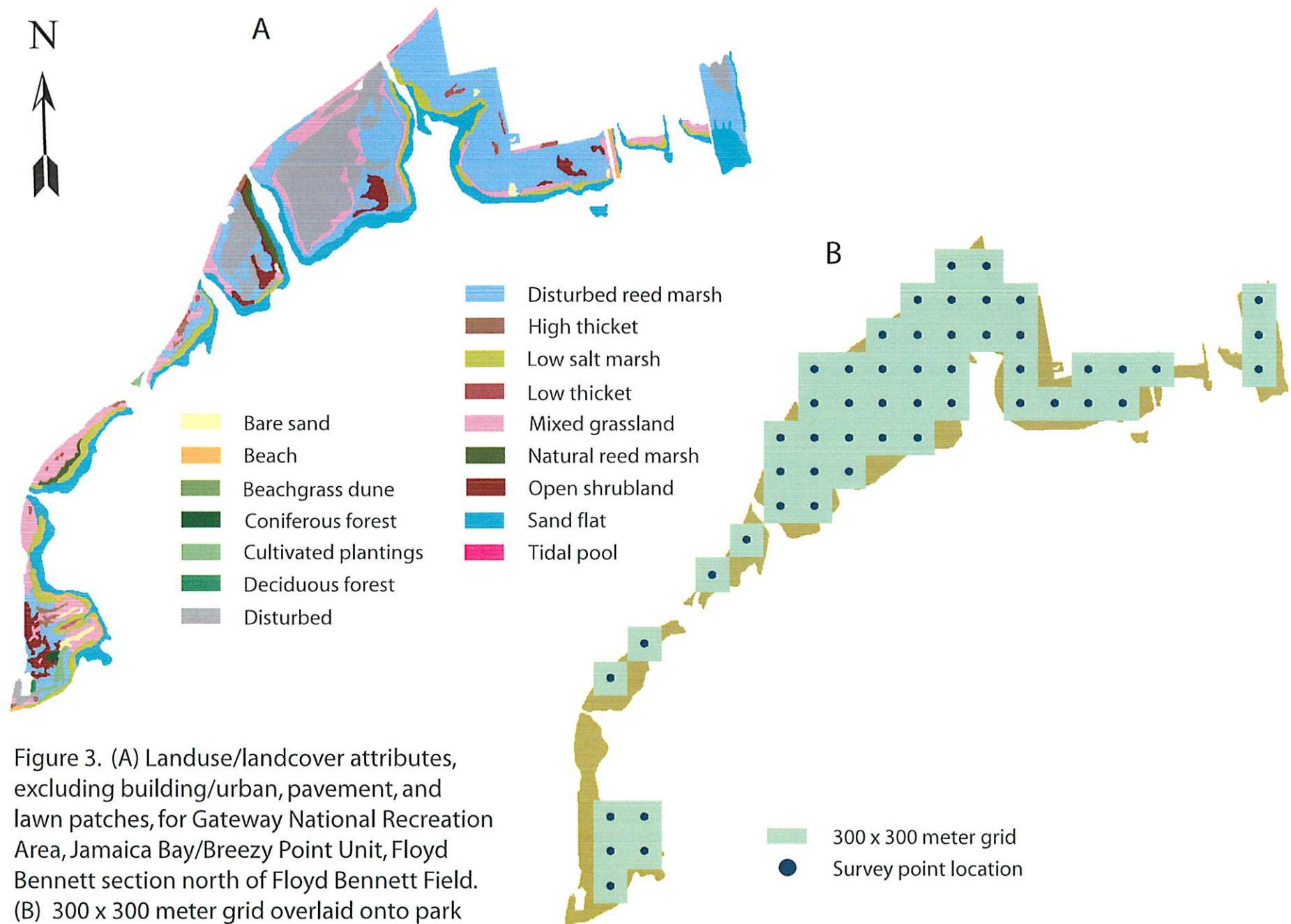


Figure 3. (A) Landuse/landcover attributes, excluding building/urban, pavement, and lawn patches, for Gateway National Recreation Area, Jamaica Bay/Breezy Point Unit, Floyd Bennett section north of Floyd Bennett Field. (B) 300 x 300 meter grid overlaid onto park boundaries (i.e., excluding building/urban, pavement, and lawn patches) with potential survey points centered in individual grid cells.

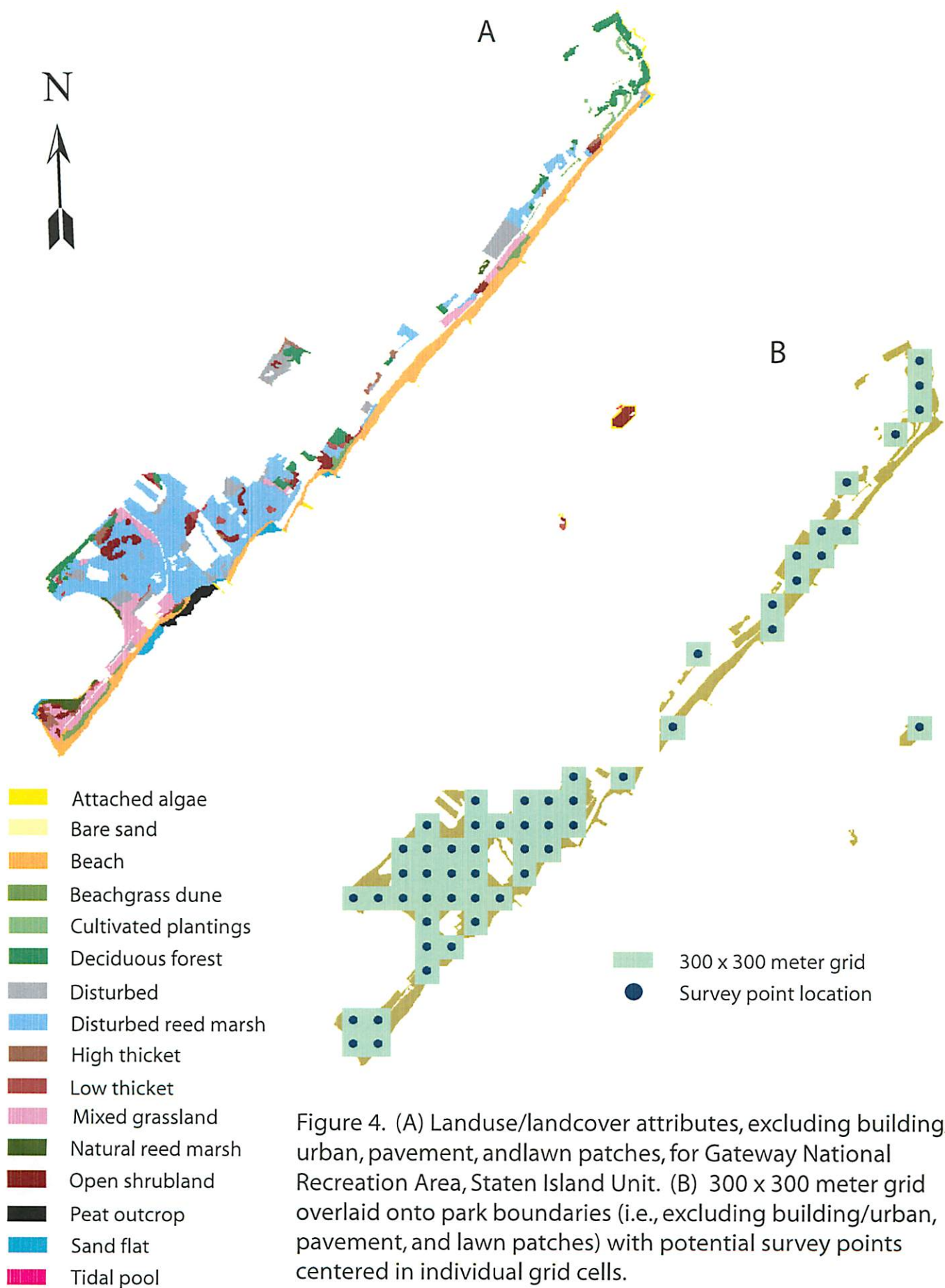


Figure 4. (A) Landuse/landcover attributes, excluding building/urban, pavement, and lawn patches, for Gateway National Recreation Area, Staten Island Unit. (B) 300 x 300 meter grid overlaid onto park boundaries (i.e., excluding building/urban, pavement, and lawn patches) with potential survey points centered in individual grid cells.

