

Space distribution of the *Phalacrocorax brasilianus* for occupation levels on the branches of the trees of the São Lourenço Park, Curitiba, Paraná, Brazil

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Introduction



Fig. 1 – Neotropic Cormorant

The Neotropic Cormorant (Fig. 1) is an aquatic bird basically cosmopolitan. It varies from 65 to 101 cm being considered the largest of the species of its group (Harrison, 1983). This bird is found, from the southwest end of the United States to the south of South America. In Brazil we find them living in swamps, dams, rivers, lakes and coastal areas. The *Phalacrocorax brasilianus* is a colonial bird that, for many times, is found with herons, roseate spoonbill and seagulls (Höfling & Camargo, 1999). Górski and Pajkert (1996) studied the interactions between *P. carbo sinensis* and *Larus argentatus argentatus* observing the competition for places to build their nests.

Considering that there are few studies on the behavioral inter-specific relationships of the Neotropic Cormorant, we aimed this study at observing the preference and the occupation of the birds in the different levels of the branches in a sub-area of the São Lourenço Park.

Methods

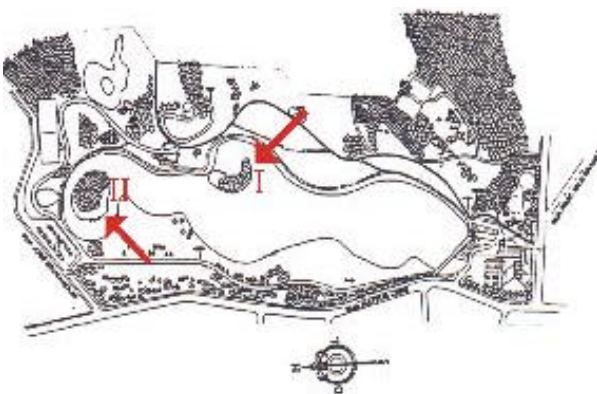


Fig. 2 – Map of São Lourenço Park with the indication of the sub-areas

The study was carried out in the period of June 2000 to October 2001, in São Lourenço Park which is located in urban environment in the city of Curitiba, state of Paraná, Brazil. In the park, there are two little islands in a lake, we chose as sub-area, the island one (illustration 2).

We used the scan method or instantaneous (Altmann, 1974) in periods of five minutes. The scan method was applied in each level of subdivided branches; numbered from one to three, from the bottom to the top of the tree.

Besides the registration of the number of animals that occupied each branch, it was also possible to observe and to register the motion patterns triggered by them. These motion patterns were previously described (Oliveira & Costa, 2001a; Oliveira & Costa, 2001b; Oliveira, 2001; Oliveira & Costa, 2002).

Results and Discussion

The Neotropic Cormorant in 52,9% (N=5660) occupied level two and soon after level one with 26% (N=5660) and last, level three (21%, N=5660). In the same way the most frequent level for the triggering of the motion patterns was level two (45,3%, N=3581) followed by level one (30,3%, N=3581) and level three (24,3%, N=3581).

The registrations performed in São Lourenço Park converge with the approaches regarding the population dispersion and behavior of spacing by DEAG (1981), because the Neotropic Cormorant had an area relatively big (the whole sub-area) and most of the time they were limited to execute their maintenance activities in a specific place, in the lateral portion of the island.

The hypothesis that the Neotropic Cormorant is distributed in a homogeneous way was not confirmed. The birds occupied level two, preferably, because that was the place where the birds had better conditions for their sustentation, with more resistant branches. Adding to this fact that level three presents smaller and fragile branches, hindering the execution of the motion patterns for a high number of individuals; whilst level one was constituted by the mixture of branches with the dichotomization of the leaves of the above level, providing a reduction of the available area for the Neotropic Cormorant.

Regarding the registrations of the motion patterns previously described, the expected results were obtained in the three levels with the patterns of maintenance activity; cleaning with the beak (36,6%, N=1087; 41,2%, N=1625; 36,9%, N=869) and rest (33,5%, N=1087, 34,8%, N=1625, 35,5%, N=869).

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