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Bird community of inner La Plata City, Argentina

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Abstract. During the years 1991–2000, 101 bird species were recorded in the city of La Plata, Argentina, 47 of which were breeding ones. The most abundant species were: *Zenaida auriculata, Columba livia, Funarius rufus, Pitangus sulphuratus, Zonotrichia capensis* and *Passer domesticus. Columba maculosa, C. picazuro, Furnarius rufus, Turdus rufiventris* and *Molothrus bonariensis* have increased in number, while *Passer domesticus* has decreased. *Zonotrichia capensis* may successfully compete for food with *Passer domesticus. Sturnus vulgaris* and *Acridotheres cristatellus* are new species in the breeding avifauna of La Plata city.

Key words: urban ornithology, Argentina, La Plata city, changes in avifauna

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INTRODUCTION

The studies on urban avifauna have been intensively developed in Europe and North America, but other geographical areas have been litle investigated. In Neotropical Region, studies on urban bird communities are scarce, and were conducted in a few cities, like México (Nocedal 1987), Sao Paulo (Matarazzo-Neuberger 1995), Porto Alegre (Rusczyk et al. 1987), Asunción (González Romero et al. 1988). In Argentina, studies on urban bird communities were only conducted in Buenos Aires (Feninger 1983, Montaldo & Claver 1986) and La Plata (Zapata 1996, Maragliano & Montalti 1997). In the former city, quantitative studies were carried out in different habitats, but for the city of La Plata, simple listing of bird species was only compiled (Zapata 1996), while bird community was studied in one park only (Maragliano & Montalti 1997). The aim of our study was to review and analyze bird community in the whole inner city of La Plata and to compare it with a bird community of an inner part of much larger city, situated nearby.

STUDY AREA

Observations were carried out in the city of La Plata, Buenos Aires Province, Argentina (34°55'S, 57°59'W). La Plata is situated amidst Pampas, in close proximity to a very wide river, Rio de la Plata, 200 km from the Atlantic Ocean. The Pampas constitute an extensive flooded area, which is at present transformed into cultivated fields, pastures and peri-urban areas.

La Plata was founded in 1882, by 2000 its population increased to c. 600 000. The total area of the city is c. 100 km^2. The climate of the city is moderately humid (Cabrera & Willink 1973). The average annual rainfall is 1062 mm, and the average annual temperature is 15.9°C.

The study area included the inner part of the city, located between Boulevard 72 to the north and Avenida Circunvalación 72 to the south, Boulevard 120 to the east and Avenida Circunvalación 31 to the west. The study area was c. 16 km^2 and two major habitat types can be distinguished there:

1) built-up part which included densely built-up city center with tall buildings, and residential area with flat houses and numerous gardens and tree aveneus (main tree species: *Jacaranda mimosifolia*, *Melia azedarach*, *Citrus aurantium*, *Platanus*, *Tilia*, *Acer*);

2) the greenery composed of parks and sport fields — hippodromo (18 ha) and two soccer stadiums of about one ha each.

Parks were regularly distributed over the study area, 16 of them had a surface of 1 ha each, three

parks were 0.5 ha in size, and two other parks had ca. 2 ha each. The largest park, which include Natural History Museum, University of La Plata, Zoological Garden and Botanic Garden, had a surface of ca. 100 ha. The vegetation of those parks was composed mainly of mature trees, such as: *Celtis tala*, *Phytolacca dioica*, *Chorisia speciosa, Araucaria angustifolia*, *Ficus monkii*, *Jacaranda mimosifolia*, *Erythrina christagalli*, *Cyca revoluta*, *Pinus pinaster*, *Cupressus*, *Phoenix canarensis*, *Morus alba*, *Gingko biloba*, *Cedrus atlantica*, *Tilia*, *Acer, Eucalyptus*, *Quercus*, *Platanus*, *Populus*, *Salix* (Delucchi et al. 1993). In general, the parks were poor in clumps, and their ground layer was covered mainly by mowed grass and was traverssed by concrete routs.

METHODS

Studies were carried out twice a month, over a period of one decade (1991–2000). The following information were collected: status of all birds species present in particular sites, their nesting sites and diet. The following criteria were taken to determine the status of particular species: breeding (nest with chicks or eggs were found), regular visitor (more than 20 records/year), irregular visitors (6–20 records/year), vagrant (1–5 records/year). The abudance of breeding species was determined as follows: very rare: 1–2 breeding pairs in the entire study area during one breeding season; rare: 3–10 breeding pairs; scarce: 11–20 breeding pairs; common: 21–100 breeding pairs; very common: 101–200 breeding pairs; abundant: 201–350 breeding pairs.

Data on the diet and nesting sites collected during this study were supplemented with data from Zapata (1996), Maragliano & Montalti (1997) and Zotta (1940). Systematics and nomenclature of birds were taken from: del Hoyo et al. (1992) and Ridgely & Tudor (1989, 1994).

RESULTS

During the years 1991–2000, 101 birds species were recorded in inner La Plata: 45 of them were breeding residents and two species were probably breeding resident (Table 1). Fifty four species were non-breeding: 12 of them were regular visitors, 14 — irregular visitors and 28 — vagrants.

Zenaida auriculata, *Columba livia*, *Furnarius rufus*, *Pitangus sulphuratus*, *Zonotrichia capensis* and *Passer domesticus* were the most abundant breeding species.

Table 1. Breeding bird community of La Plata, 1991–2000.
Status: Vr — very rare, R — rare, S — scarce, C — common, Vc — very common, A — abundant.
Diet: C — carnivorous, F — frugivorous, G — granivorous, I — insectivorous, M — man-produced food, N — nectarivorous, O — omnivorous.
Nesting sites: T — trees, S — shrubs, B — buildings, W — water vegetation, G — ground.
* — species which adapts nests of other bird species located in trees, shrubs, buildings and on the ground.

Species	Status	Diet	Nesting
Buteo magnirostris	Vr	C	T
Polyborus plancus	R	C	T
Milvago chimango	S	C/I	T
Aramides ypecaha	Vr	O	W
Gallinula chloropus	Vr	O	W
Columba livia	A	G/M	B
Columba picazuro	Vc	F/G	T
Columba maculosa	S	F/G	T
Zenaida auriculata	A	G	T
Columbina picui	C	G	T
Aratinga leucophthalmus	Vr	G	T
Nandayus nenday	Vr	G	T
Myiopsitta monachus	C	F	T
Guira guira	S	I	T/S
Tyto alba	R	C	B
Chlorostilbon aureoventris	C	N	S
Picoides mixtus	R	I	T
Colaptes melanolaimus	R	I	T
Lepidocolaptes angustirostris	S	I	T
Furnarius rufus	A	I	T/B
Serpophaga subcristata	R	I	T
Satrapa icterophrys	Vr	I	T
Machetornis rixosus	C	I	T
Pitangus sulphuratus	A	I	T
Myiodynastes maculatus	S	I	T
Tyrannus melancholicus	S	I	T
Tyrannus savana	R	I	T
Phaeoprogne tapera	S	I	T
Progne chalybea	S	I	B
Tachycineta leucorrhoa	C	I	B
Troglodytes aedon	Vc	I	S/B
Polioptila dumicola	R	I	S
Turdus rufiventris	Vc	F	T
Turdus amaurochalinus	C	F	T
Mimus saturninus	Vc	O	S/T
Sturnus vulgaris	R	O	T/B
Acridotheres cristatellus	R	O	T/B
Parula pitiayumi	S	I	S
Piranga flava	Vr	G	T
Molothrus bonariensis	C	G	*
Molothrus badius	C	G	T
Paroaria coronata	R	G	T
Zonotrichia capensis	A	G	T/S
Sicalis flaveola	R	G	T
Carduelis magellanicus	R	G	T
Passer domesticus	A	G/M	B

Some species have increased in numbers during the study period: *Columba picazuro* (by 21%), *C. maculosa* (14%), *Furnarius rufus* (18%), *Turdus rufiventris* (16%), *Molothrus bonariensis* (11%) and *Zonotrichia capensis* (15%). *Passer domesticus* has decreased during that period by 10%. *Sturnus vulgaris* and *Acridotheres cristatellus* probably began to breed in La Plata in the second half of 1980s (Saidón et al. 1988, Di Giácomo et al. 1993). *Aramides ypecaha* has probably disapared from the inner of La Plata in the last decade, this species is restricted at the Zoological Garden where it breeds (Maragliano & Montalti 1997).

In the study area, insectivorous and granivorous were the most representative groups, they included 18 and 13 species, respectively. In terms of the number of breeding pairs, granivorous birds were more numerous (800–1500 breeding pairs) than insectivorous birds (500–1000 breeding pairs). Frugivorous group included 100–1000 breeding pairs represented by five species. Carnivorous and omnivorous groups were represented by four and five species respectively, with 20–50 breeding pairs in each group. Nectarivorous group included only one species, *Chlorostilbon aureoventris*, with several dozen breeding pairs.

In La Plata, most species (76%) nested in trees and shrubs. There were five species (11%) nesting on man-made structures (mainly buildings), two species (4%) nested in water vegetation and no ground nesting species was recorded. Four species (9%) nested mainly in trees and shrubs, sometimes on buildings. E.g., *Furnarius rufus* nests were found in *Araucaria angustifolia*, *Melia azedarach*, *Tilia* sp., *Eucalyptus* sp., *Populus* sp. and also under roofs and on poles.

Non-breeding species included:

1) regular visitors: *Egretta alba*, *Egretta thula*, *Syrigma sibilatrix*, *Nycticorax nycticorax*, *Bubulcus ibis*, *Falco sparverius*, *Dendrocygna viduata*, *Vanellus chilensis*, *Larus maculipennis*, *Colaptes campestris*, *Tachycineta leucopyga*, *Hirundo rustica*;

2) irregular visitors: *Phalacrocorax olivaceus*, *Plegadis chihi*, *Jacana jacana*, *Rostrhamus sociabilis*, *Elanus leucurus*, *Chauna torquata*, *Larus dominicanus*, *Hylocharis chrysura*, *Leucochloris albicollis*, *Ceryle torquata*, *Chloroceryle americana*, *Anumbius annumbi*, *Mimus triurus*, *Sicalis luteola*;

3) vagrants: *Podiceps major*, *Podiceps occipitalis*, *Podylimbus podiceps*, *Anhinga anhinga*, *Ardea cocoi*, *Butorides striatus*, *Tigrisoma lineatum*, *Ixobrychus involucris*, *Ciconia maguari*, *Platalea ajaja*, *Geranoetus melanoleucus*, *Fulica leucoptera*, *Tringa solitaria*, *Coccyzus melacoryphus*, *Glaucidium brasilianum*, *Athene cunicularia*, *Chloroceryle amazona*, *Xolmis irupero*, *Pyrocephalus rubinus*, *Elaenia parvirostris*, *Empidonomus aurantoatriocristatus*, *Anthus correndera*, *Turdus chiguanco*, *Thraupis bonariensis*, *Thraupis sayaca*, *Coryphospingus cuculatus*, *Cyanocompsa cyanea*, *Icterus cayannensis*.

DISCUSSION

About 500 bird species occur in Buenos Aires Province (Narosky & Di Giacomo 1993), while in inner La Plata city, 101 (c. 20%) birds species were recorded, included 47 breeding species. This is rather a high proportion if compared with bird community of inner Buenos Aires city (situated c. 60 km N of La Plata), where only 16 breeding species were recorded (Feninger 1983). This difference can be related to the size of both cities and the proximity to natural habitats. Buenos Aires is a big city with a population of ca. 6 mln, and it is situated far from natural habitats, while the population of La Plata is lower by one order of magnitud, and the city is situated close to natural habitats. Other factor, which can play a role could be the total surface of parks: this is comparatively much larger in La Plata than in Buenos Aires.

In comparison with avifauna of inner Buenos Aires (Feninger 1983) the breeding bird community of inner La Plata is not only much diverse, but also not so strongly dominated by *Passer domesticus* and *Columba livia*. In both cities, the most common indigenous species are: *Z. auriculata*, *F. rufus*, *P. sulphuratus*. In La Plata also the *Z. capensis* was found to be one of the most common breeding resident (Table 1), and also in inner Buenos Aires, at present, it is relatively common breeding resident (own observations). In the last decade, *Passer domesticus* has markedly decreased in numbers, while *Z. capensis* during the same period has increased in La Plata. Those two species may compete for food, with *Z. capensis* increasing in numbers and *P. domesticus* decreasing.

Two exotic species, which began to breed in La Plata recently, namely *Sturnus vulgaris* and *Acridotheres cristatellus* (Saidón et al. 1988) may cause another changes in the breeding avifauna, if their numbers will continue to grow. *Columba picazuro*, *Furnarius rufus*, *Tachycineta leucorrhoa*, and *Turdus rufiventris* are expected to be especially affected by those starlings due to the use of nesting sites and food (Bent 1950, Kerpez & Smith 1990).

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STRESZCZENIE

[Zespół ptaków śródmieścia miasta La Plata, Argentyna]

Na obszarze 16 km^2 w latach 1991–2000 wykazano 101 gatunków ptaków, spośród których 47 gniazdowało (Tab. 1). Najliczniejszymi gatunkami lęgowymi były: *Zenaida auriculata, Columba livia, Funarius rufus, Pitangus sulphuratus, Zonotrichia capensis* i *Passer domesticus.* W okresie badań nastąpił wzrost liczebności *Columba maculosa, C. picazuro, Furnarius rufus, Turdus rufiventris* i *Molothrus bonariensis* oraz spadek liczebności *Passer domesticus*. *Zonotrichia capensis* może wygrywać konkurencję o pokarm z *Passer domesticus*. W drugiej połowie lat 90-tych w La Plata zaczęły gniazdować 2 gatunki egzotyczne: *Sturnus vulgaris* i *Acridotheres cristatellus*.