Ratio of Juveniles and Adults of American Crow *Corvus brachyrhynchos* in Family Groups at Loyola Marymount University and Venice Beach, Los Angeles, CA

Yeon Jae Kim; E. Eberts, Dr. P. Auger, Dr. E. Strauss

Center For Urban Resilience | Loyola Marymount University | Spring 2017

Abstract

American crows are highly social animals and display cooperative breeding, where nonbreeding offspring help their breeding parents care for juveniles. (Chamberlain-Auger, Auger, & Strauss, 1990). In order to gain a better understanding of the role of these nonbreeding offspring in raising nestlings and juveniles, crow nests and breeding groups were closely observed on the campus of Loyola Marymount University and at Venice Beach during the early summer of 2016. In each group, juveniles were usually closely associated with a single adult, however, the apparent roles of the adults within the group varied. In these apparent family groups one or two crows simply watched and supervised while the adults closely associated with each juvenile fed the juveniles. These differing apparent roles adopted by adults may ensure juvenile safety while in the process of feeding. Confirmation of these apparent roles would be best determined in future study by color banding resident birds.

Introduction

- The purpose of this study was to better understand the cooperative breeding system of american crows and examine the ratio between juveniles and adults in family groups
- The ratio was predicted as 1:1 due to the assumption that juveniles would need to be constantly fed.

Methods

- By monitoring crows on the campus of Loyola Marymount University and at Venice Beach, four main sites of crow social groups in raising nestlings and juveniles were identified.
- Direct field observation was primarily used to document the behaviors of crows in social groups. Photography and video were also taken.

Location of Nests Before Fledgling

Main Area of Group Activity

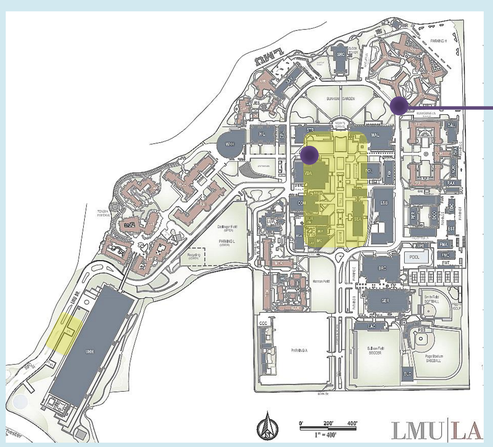

Figure1: Nest sites on Campus of Loyola Marymount University

Data

Figure1: A juvenile sitting on a tree

Figure2: A juvenile sitting on the ground

Figure3: An adult in a group

Figure 4: One adult stayed at the corner of roof supervising juveniles, and the other kept carrying foods to the juveniles.

Figure 5: A juvenile waiting for feeder

Figure 6: A juvenile making vocalization to attract the feeder near by

Figure 7: The tree where the nest was located

Figure 8: Three family groups of crows sitting together on a branch

Results

- The average size of family groups was eight; four of which were juveniles.
- The juveniles were distinguished from the adult feeders through the smaller body, short legs, bigger proportion of beak, lackluster and fluffy feather, and specific vocalization.
- The juveniles hid inside branches of a trees, waiting for feeders. They made specific vocalizations to inform their locations to feeders when feeders were near by.
- One or two feeders stayed with groups of juveniles, while other adult feeders searched for food.
- An Overall one to one ratio of juveniles and feeders was maintained.

Discussion

- The hypothesis of one to one ratio of juveniles and feeders was supported in the four different family groups of crows observed for six weeks from May 16th to June 21th.
- A long-term studies along seasons and more case studies with larger groups would be suggested to support the one to one ratio of juveniles and feeders.
- This ratio likely would change depending on variations in environmental conditions such as food availability or predator pressures.
- Juveniles remained separated and rarely shared a branch or a tree when they were fed; however, most of them got together as they grew and were able to move actively. Interaction changes between juveniles could be studied in the future in order to investigate instances of sibling rivalry.
- The apparent roles of adults delivering food supplies and security conditions and the change of the roles as juveniles grow would be best determined in future studies through color banding family group birds.

Literature Cited

- June A. Chamberlain-Auger, Auger, P., & Strauss, E. (1990). Breeding Biology of American Crows. *The Wilson Bulletin, 102*(4), 615-622.

Acknowledgements

- LMU's Center For Urban Resilience