

Seasonal Dynamic of the Cormorant *Phalacrocorax aristoteli* in Lake Dam 16th Tishreen

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Received Date: 03 October 2021

Revised Date: 05 November 2021

Accepted Date: 15 November 2021

Abstract - This study was conducted from July 2018 to July 2019 at a rate of two visits per month at Lake Dam 16th Tishreen, the results showed the presence of a Cormorant *Phalacrocorax aristoteli* in the study areas (floating cages, reservoir). As a result of monitoring and paint counts at the two sites selected from the lake. We recorded of 398 individuals of *Phalacrocorax aristoteli* from them 355 and 147 from first and second site, respectively and the recorded *Phalacrocorax aristoteli* the highest frequency rate around the floating cages. The numbers of recorded bird species varied according to the months of the year, from 10 individuals during July(2018) to 180 in March while it migrated in May 2019. Some ecological coefficients (Species richness factor, variation factor) was studied where it was found that its numbers were less variable and therefore more stable in the basin area with a different coefficient (0.47) and it appeared that march 2019.

Keywords — Dam 16th Tishreen, Floating cages, *Phalacrocorax aristoteli*, Variation factor.

I. INTRODUCTION

Syria is home to many endemic birds in addition to migratory, passing or visiting birds, but these birds do not exceed 3.5% of the total species around the world. Number of bird recorded species from Syria reached to the 360 where the Syrian bird wealth reaches 360 species distributed in eighteen levels comprising fifty-seven bird species (National Study of Biodiversity, 1998). Edik (2010) reported 115 species of birds from Deir ez-Zor. Seven species of birds were recorded from the city of Damascus namely, grey crow, black beggar, periodic sparrow, common swallow, hook of houses and cream (Motawaj, 2000). Al Sheikh (2011) studied birds at the site of the Safkoun and recorded 23 species of birds. Al Sheikh (2013) studied 15 species water birds in the fresh water of the Syrian coast. The number of birds threatened by extinction locally and internationally, which is home to 17 species, including the *Egretta alba*, is home to 17 species, according to (State of the Environment Report, 2012).

Studies on water birds of the Syrian coast are few and even rare, the importance of research comes as it studies for the first time *Phalacrocorax aristoteli* in terms of environment,

distribution and classification.

The current study aims to investigate the monthly numerical changes of the *Phalacrocorax aristoteli* at selected sites of Lake Dam 16th Tishreen.

II. MATERIALS AND METHODS

The research was carried out in Lake Dam 16th Tishreen, about 16 km from Latakia. The lake is 11.2 km long and 11 km wide, used to irrigate about 20,000 hectares of farmland surrounded by forestry trees such as wild pines and oaks. Monitoring of the *Phalacrocorax aristoteli* in Lake 16th Tishreen were done from July 2018 to July 2019 at the rate of two field visits per month in the method of monitoring the beach and point counts according to (Hill *et al.*, 1990). Using a two-eyed binocular (Olympus 10*50 DPSI) for distant birds, with the naked eye of nearby birds for a period of 1-3 hours of observation for each of the selected locations (floating cage site, reservoir area)

The number of the *Phalacrocorax aristoteli* in was recorded and some photos were provided. Some measurements have been taken (total length of the bird, wing length, length of tail, length of the leg, length of beak...)(Allous, 1961; Proter *et al.*, 2004).

Author name, affiliation and complete address are to be placed underneath the title. In case of multiple authorship of a submitted paper, the affiliation and complete address of each author must be specified. All characters of species bird recorded (shape, size and color) and identified based on available keys (Schemnit *et al.*, 2005, Sokolov, 1989, Gladkove *et al.*, 1964). Studied material was preserved in dry methods according to Bayrakdar, 1984. Those material were deposited in the collection of the Department of Zoology, Faculty of Sciences, University of Tishreen, Latakia, Syria.

The statistical study was using SPSS software and some ecological factors were calculated:

Species Richness: $D=(S-1)/\ln$

S= The number of species per year

N= The number of species per round

(Levine, 2000; Charles, 1978)

Coefficient Variation: (Charles, 1978)

$C.V=S/X*100$



S= Standard deviation
 X= Average arithmetic

III. RESULTS AND DISCUSSION

This study conducted in July 2018 to July 2019, the *Phalacrocorax aristoteli* was observed at the two study sites (floating cage area and reservoir area)

This bird belongs to:

Taxonomy:

Order: Pelecaniformes

Family: Phalacrocoracidae

Genus: *Phalacrocorax*

Species : *Ph.aristotelis*

Pelecaniformes



A B

Fig1) Apicture of *Ph.aristotelis*

A: *Phalacrocorax aristoteli* by (Azzv et al., 2012)

B:12/12/2018 in the Lake Dam 16th of Tishreen- Lattakia (Syria)

The Cormorant *Phalacrocorise aristotelis* L,176

The number of individuals ranged from 10 in July 2018 to 180 in March 2019

When examining adult individuals, it was found that there was a green bronze gloss of the aryash (on the back and wings), while on the head and neck the glitter was blue with narrow black edges of the back feathers and wings. The wedding gown appears on top of the head vertical lyceum or curved forward approximately 500 mm length. From July to August, it is noted that the covert feathers in the larynx area take the white or yellowish color. The length of the wing is 265-295 mm.

Young are colored in brown with a green shine on the dorsal side of the body. The larynx and crop are almost white, the abdominal side of the body is dark brown and sometimes bleached (Fig.1).

Distribution: River and sea arrays, nesting on the slopes of the banks, rocky cliffs of the beach. A number of members of the gaelitis were hunted from the collection areas and some were taxidermies in the dry way.

The glistening bird watches the fish unbored and then dives and stays underwater for about 4 minutes to catch its prey, when it feels threatened to fly quickly in the form of a trap.

Situation: immigrants in most of its breeding areas, as well as in the Black Sea, the Mediterranean coasts and the Arabian Peninsula. (Porter et al., 2004)

Monthly and seasonality dynamic of the *Phalacrocorax aristoteli* in Lake Dam 16 Tishreen:

Most water birds migrate in different ways, and their numbers vary during the seasons (Porter et al., 2004) the numbers of the *Phalacrocorax aristoteli* recorded during the search period have shown that Table (1) the total number of *Phalacrocorax aristoteli* birds was 180 individual in march 2019, while in July 2018 declined to 10 . This can be due to climate change between the seasons and the abundance of the food base. Figure (3) data indicate that the *Phalacrocorax aristoteli* appeared during the months of the year is varying numbers between the two study areas and was the highest number of 398 individual in the floating cage area while reaching 147 in the reservoir area.

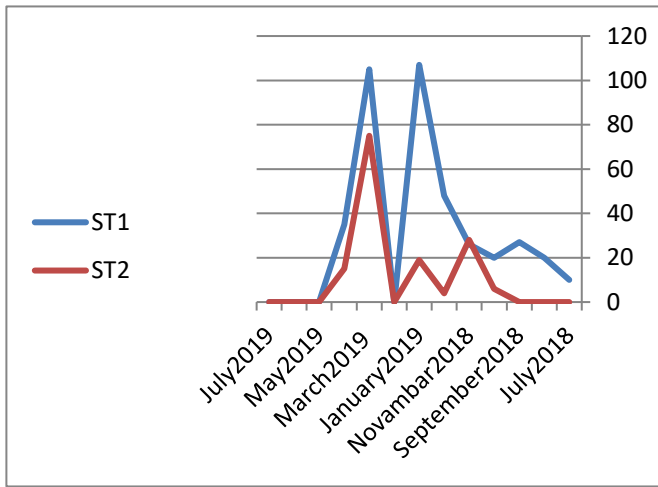
It was noted from the study of the difference factor (Fig 4) for the numbers of the *Phalacrocorax aristoteli* in the study areas during the study period that its numbers were less variable in the floating cage area with 0.47 and it was shown by studying the changes of the qualitative richness factor of the *Phalacrocorax aristoteli* in the study areas for the months in which the research was conducted that march 2019 is the most rich in the numbers of this bird with a factor of richness 0.434.

TABLE I

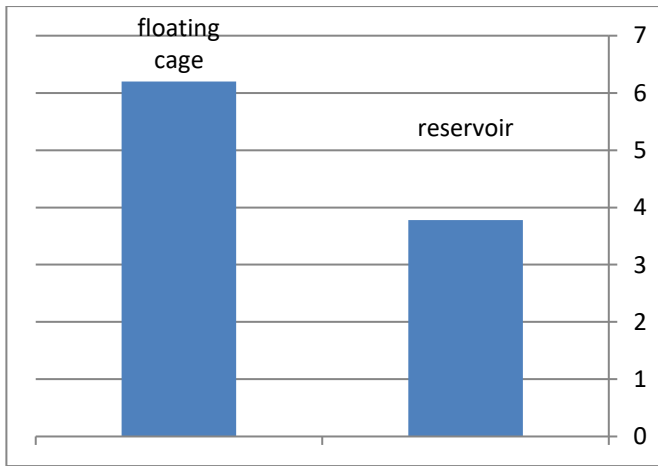
The numbers variation of the *Phalacrocorax aristoteli* in the studes areas (floating cages, reservoir) from 2018 until 2019

Location and Number of bird	<i>Tachybaptus ruficollis</i>	
	Floating cage site	Reservoir area
Months/ Year	N	N
2018July	10	0
August 2018	20	0
September2018	27	0

October2018	20	6
Novambar2018	26	28
December2018	48	4
January2019	107	19
February 2019	0	0
March2019	105	75
April2019	35	15
May2019	0	0
June2019	0	0
July2019	0	0
Grand total	398	147
X	39.58+	24.50+
SD	0.43-	0.117-



(Fig 7) Changes in the numbers of the *Ph.aristoteli* in the study area (Floating cage ST1,Reservoir ST2)in Lake Dam 16th tishreen



(Fig 4): Difference factor for the numbers of the *Phalaropus aristoteli* study areas.

IV. CONCLUSIONS

The *Phalaropus aristoteli* is a water bird scattered in The Lake of The Dam of 16 Tishreen and has been identified and described in the research for the first time. The *Phalaropus aristoteli* forms bird colonies in the winter, with hundreds of numbers in the floating cage area.

ACKNOWLEDGMENT

The authors would like to thank Faculty of Sciences, Tishreen University, Lattakia, Syria for providing the financial and logistic support to this work.

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