

Three-year Monitoring of the reproductive couples of Little Bittern *Ixobrychus minutus* in the territory Of the Regional Nature Reserve of Lakes Lungo e Ripasottile

Sterpi M.*, Sterpi L.**, Rampini E.***

*Ornithologist, Rieti, Italy (e-mail: mauryste@gmail.com);

**Ornithologist, Rieti, Italy (e-mail: lucaste08@gmail.com);

***Ornithologist, Rieti, Italy (e-mail: ericarampini1994@gmail.com).

INTRODUCTION

The Little Bittern (*Ixobrychus minutus*) is a polytypical species. In Italy, this species has migratory, summering and regular breeding behaviors (Brichetti e Massa, 1998). Nationwide, its population is estimated to be 1300-2300 pairs (Brichetti e Fracasso, 2003). Differently, the European population of the species is estimated to be 9400-15000 pairs (BirdLife International, 2004).

In the Regional Nature Reserve of Lakes Lungo and Ripasottile (RNRLLR) (RI), the Little Bittern is considered to be a regular migrant and nidifying (Rossi et al., 2006), (Brunelli et al., 2011). From 2014, a data collection on the reproduction of the species was started yearly, and for the following three years, investigating around the area of the lakes of Ripasottile, Lungo, and Pozzo.



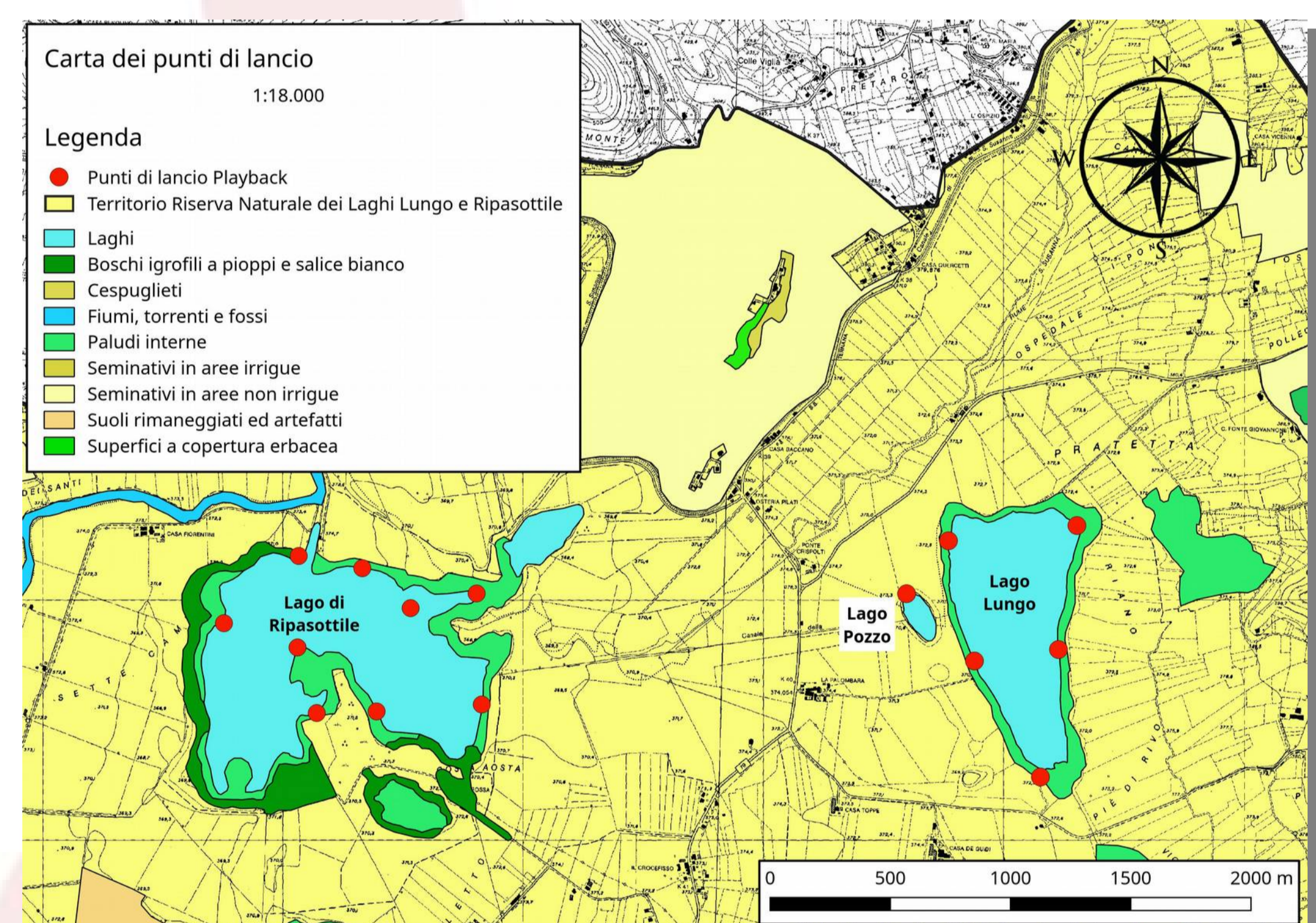
Tarabusino (*Ixobrychus minutus*)

Study Area

The studied area is in the territory of Nature Reserve and devolves in a ZSC (Zona Speciale di Conservazione), a ZPS (Zona a Protezione Speciale), and in a SIC zone (Sito di Interesse Comunitario) IT6020011. These areas are located in a field between the Appennine's mountains, the pre-Appennine zone, Reatini's mountains, and Sabini's mountains. Such areas reach an altitude of roughly 376 m above the sea-level. The territory includes two major lakes, Lungo and Ripasottile with an extension of respectively 60 ha and 80 ha, and a medium depth of respectively 2,5 e 3,8 (Di Carlo, 1960; Di Carlo & Castiglia, 1981). Also, in the plain there are some smaller lakes basins, and rivers, which with the major lakes form a water system within an environment that hosts a high biodiversity of considerable naturalistic interests among which a multi-specific oasis (Angelici et al., 2013).

MATERIALS AND METHODS

For this type of study, it was used the playback method that lures, during the reproductive period, the response of the territorial male of the species. 15 listening stations have been positioned on the territory, respectively 9 in Lake Ripasottile, 5 in Lake Lungo, and one in Lake Pozzo. Every listening station has been positioned with the help of the QGIS software at a distance of about 500mt from each other. In so doing, it was possible to obtain a homogeneous coverage and without unnecessary overlapping of the investigated territory. The field trips, during the three years of study, were a total of 21, of which 9 at Lake Ripasottile, 9 at Lake Lungo and 3 at Lake Pozzo, for a total of 42 hours. Once the data have been collected, they have been translated on a map with the use of the software (QGIS), obtaining the estimated number of the surveyed couples and the extension of their reproductive sites (Pugliesi et al., 1995).



Map points of launch of playback.

Years	Lake Ripasottile	Lake Lungo	Lake Pozzo
2014	7	4	2
2015	10	6	1
2016	9	5	2
Total couples	26	15	5
Total of couples in the three years			46

RESULTS

According to the data collected during the three years of study, in the Lake Ripasottile there is a presence of from 7 up to 10 couples of Little Bittern. On the Lake Lungo such presence goes from 4 up to 6 pairs, while in the Lake Pozzo from 1 up to 2 couples. Collectively, it has been estimated a maximum of 18 couples and a minimum of 12 in the whole analysed area. The area of vegetation suitable for hosting couples near the lakes turns out to be of 37 ha, with a maximum density of a pair every 2,05 ha and minimum of one pair every 3,08 ha.

According to chart n°1, in the three years of study, 46 couples were surveyed in the protected area, of which 26 at Lake Ripasottile, 15 at Lake Lungo and 5 at Lake Pozzo. The Lake of Ripasottile is, therefore, the one with the highest number of presences of such species, due to its greater extension. In addition, having an area closed to the public provides a place free - or almost- from the anthropic disturbance.

DISCUSSION and CONCLUSIONS

The medium density studied from this monitoring is of a couple every 2,56 ha. This data results to be lower than those obtained in previous studies (Pardo-Cerbara F., 2010). The cause of this low density can be linked to the kind of the lake's shores, which decline rapidly. Furthermore, the presence of the species could be limited by the latitude where the study area is located. Finally, considering that the Little Bittern is a kind of Union interest species, as inserted in the Annex I of the Bird Directive (2009/147/CE ex 79/409/CEE), this work represents a starting point on the knowledge of the species in the Province of Rieti and will be useful for its conservation.

REFERENCES

- AA. VV., 2009. La Riserva Naturale dei Laghi Lungo e Ripasottile. Conoscenza e pianificazione. Studi e materiali per le norme di salvaguardia della ZPS IT6020011. Regione Lazio, Assessorato all'Ambiente e Agenzia Regionale per i Parchi del Lazio, Roma e Riserva Naturale Regionale dei Laghi Lungo e Ripasottile, Rieti.
- Angelici C., Biondi M., Brunelli M., Calvario E., Cento M., Corbi F., Demartini L., Pastorelli S., Pietrelli L., Pinos L., Roma S., Sarrocco S., Sterpi L. & Sterpi M., 2013. Le garzaie nel Lazio, aggiornamento al 2013. Alula, 20 (1-2): 3-10.
- Brunelli M., Sarrocco S., Corbi F., Sorace A., Boano A., De Felici S., Guerrieri G., Meschini A. & Roma S. (a cura di). Nuovo Atlante degli Uccelli Nidificanti nel Lazio. Edizioni ARP, Agenzia Regionale per i Parchi del Lazio, Roma: 427-435.
- Di Carlo E. A., 1960. Notizie ornitologiche dalla Sabina. Riv. ital. Orn., 30: 171-174.
- Di Carlo E. A. & Castiglia G., 1981. Risultati di ricerche ornitologiche effettuate nell'area dei laghi Velini (Piana Reatina, Rieti, Lazio). Gli Uccelli d'Italia, 6 (3): 127-170.
- Luca Pugliesi, Andrea Fontanelli, Antonio Perfetti and Marco Taverni (1995). The population of Bittern *Botaurus stellaris* in the Diaccia Botrona marsh, Central Italy: four years of census (1991-94). Avocetta N° 19: 182-188.
- Pardo-Cerbara, (2010). Breeding Biology of The Little Bittern *Ixobrychus Minutus* in The Ebro Delta (NE SPAIN) Ardeola 57(2), 2010, 407-416 page numbers.