

Montpellier Snakes *Malpolon monspessulanus* as predators of Audouin's Gull *Larus audouinii* chicks

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This note documents two cases of predation by Montpellier Snakes Malpolon monspessulanus on Audouin's Gull Larus audouinii chicks in the Ebro Delta colony (north-western Mediterranean). On both occasions, snakes killed gull chicks in the presence of the parents, but parent gulls did not attempt to intervene against the predator. Observations suggest that predation by Montpellier Snakes does not constitute a significant threat for Audouin's Gull at the Ebro Delta.

Key words: Audouin's Gull, *Larus audouinii*, Montpellier Snake, *Malpolon monspessulanus*, predation, Ebro Delta.

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INTRODUCTION

Snakes are known as predators of birds in both temperate and tropical localities (Frederick & Collopy 1989, Patnode & White 1992, Schaub et al. 1992). Although colonial waterbirds, such as some Ciconiiformes, are preyed upon by snakes (Frederick & Collopy 1989), no accounts of snakes preying on seabirds have yet been reported.

The largest colony of Audouin's Gull *Larus audouinii* (c. 70% of total world population) is located on the Punta de la Banya (40°37'N 00°35'E, Ebro Delta Nat.

Park), NE Spain, a flat, sandy peninsula joined to the mainland by a long sandbar. At this site, the Montpellier Snake *Malpolon monspessulanus* is the only reptilian predator (Llorente et al. 1991). This snake has terrestrial habits and feeds on a wide range of prey, such as other reptiles, small mammals and birds (Valverde 1967, Vericad & Escarre 1976). However, the high number of Charadriiformes breeding here (14,000 pairs in 1993, see Oro & Martínez-Vilalta 1994) creates a rich potential prey resource for snakes (Oro 1994).

Predation by Montpellier Snakes on Audouin's Gulls was recorded on two

occasions. On 22 June 1992 (1120h GMT) I found a snake c. 125 cm long preying on a chick approximately two weeks old, killing it by strangulation. On 20 May 1993 (1030h GMT) I recorded a c. 175 cm Montpellier Snake strangling an approximately one-week-old chick. The first observation lasted 35 minutes and the second c. 20 minutes, and in both cases the snakes ingested the chicks. In both cases, adult birds gave alarm calls and hovered low over the snake and its prey, but the gulls never tried to attack the predator, as they normally do against predatory Yellow-legged Gulls *Larus cachinnans* (Oro & Martínez-Vilalta 1994). Since the observations were initiated upon hearing the alarm calls of the parents and the hovering flight of adults (both the parents and neighbours), it is not clear whether the chicks were attended by parents.

Only 34 sightings of Montpellier Snakes were made within the charadriiform breeding areas at the Punta de la Banya during the springs between 1992 and 1997 in more than 5,000 man-hours of fieldwork, suggesting that interactions between snakes and birds may be rather uncommon (see also Oro 1994, Genovart et al. 1997). Moreover, in these years, more than 750 hours were spent observing Audouin's Gull behaviour from a hide and no other attacks of Montpellier Snakes on chicks or adults of Audouin's Gull were observed. These extensive observations suggest that predation by Montpellier Snakes on Audouin's Gull chicks is occasional at the Punta de la Banya, but it is not restricted to this particular site. One additional observation of a Montpellier Snake eating an Audouin's Gull chick was also recorded at Isla Grossa, a small colony (ca. 350 pairs) in south-east Spain (Hernández-Gil 1997), although details of the incident were not provided. However, my observations suggest that snake predation on Audouin's Gull is of little consequence to the popu-

lation, and that no control or eradication measures need to be taken. •

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RESUM

La Serp Verda Malpolon monspessulanus com a predador de polls de Gavina Corsa Larus audouinii

En aquesta nota es descriuen dos casos de predació de polls de Gavina Corsa Larus audouinii per Serp Verda Malpolon monspessulanus a la colònia del delta de l'Ebre. En totes dues ocasions, les serps van matar els polls en presència dels adults, que no van intervenir per intentar expulsar el predador. Tanmateix, aquestes observacions suggereixen que la predació per la Serp Verda no constitueix una amenaça per a la colònia de Gavina Corsa al delta de l'Ebre.

REFERENCES

FREDERICK, P.C. & COLLOPY, M.W. 1989. The role of predation in determining reproductive success of colonially nesting wading birds in the Florida Everglades (USA). *Condor* 91: 860-867.

GENOVART, M., ORO, D., GONZÁLEZ-SOLÍS, J. & PEDROCCHI, V. 1997. Reptile predation by gulls in two western

Mediterranean sites. *Herpetological Review* 28: 43-44.

HERNÁNDEZ-GIL, V. 1997. Isla Grossa: un santuario para la gaviota de Audouin en el litoral murciano. *Quercus* 133: 12-15.

LLORENTE, G., FONTANET, X., MONTORI, A., SANTOS, X. & CARRETERO, M.A. 1991. Herpetofauna del delta de l'Ebre: distribució i conservació de les espècies. *Butll. Parc Natural Delta de l'Ebre* 6: 14-21.

ORO, D. 1994. Predation of an adult Avocet *Recurvirostra avosetta* by Montpellier Snake *Malpolon monspessulanus*. *Butll. G.C.A.* 11: 71-73.

ORO, D. & MARTÍNEZ-VILALTA, A. 1994. Factors affecting kleptoparasitism and predation rates of Audouin's Gull *Larus*

audouinii by the Yellow-legged Gull *Larus cachinnans* at the Ebro Delta. *Colonial Waterbirds* 17: 35-41.

PATNODE, K.A. & WHITE, D.H. 1992. Effects of habitat on avian productivity in abandoned pecan orchards in southern Georgia. *J. Field Ornithol.* 63: 76-85.

SCHAUB, R., MUMME, R.L. & WOOLFENDEN, G.E. 1992. Predation on the eggs and nestlings of Florida Scrub Jays. *Auk* 109: 585-593.

VALVERDE, J.A. 1967. *Estructura de una comunidad de vertebrados terrestres*. Monografías de la Estación Biológica de Doñana. Madrid: CSIC.

VERICAD, J.R. & ESCARRE, A. 1976. Datos de alimentación de ofidios en el Levante Sur Ibérico. *Mediterránea* 1: 5-33.