Consequences of a mass mortality of wintering oystercatchers on a local breeding population

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ABSTRACT

Our data show a drop in adult survival but no carry-over effects into the next breeding period.

Fig. 2: Dead oystercatcher on the island of Borkum, February 2012.

INTRODUCTION

In February 2012, a cold spell led to a mass mortality of hundreds of Eurasian oystercatchers (*Haematopus ostralegus*) wintering in the Schleswig-Holstein Wadden Sea, Germany. We used ringing and biometric data to investigate whether the cold spell affected (i) adult survival rate in a local breeding population and (ii) condition of alive birds in the breeding period of 2012.

Fig. 3: Map of the Schleswig-Holstein Wadden Sea, Germany. Places where more than 200 oystercatchers were found dead in February 2012 (Schwemmer et al. 2014) are marked with red dots and the location of Meldorf Bight is marked with a red circle.

MATERIAL AND METHODS

Fig. 4: Oyster-catchers were caught with nest traps.

We colour-ringed 71 adult breeding oystercatchers at Meldorf Bight (fig. 3) in years 2010 to 2014. 563 re-sightings were collected until 2015. Apparent survival was calculated with the live recaptures (CJS) function in MARK (6.1). Egg volume was determined according to Jager et al. (2000).

References: Jager et al. (2000), Ibis 142: 603-613; Schwemmer et al. (2014), Waterbirds 37: 319-330

Fig. 5: Birds were ringed with colour rings (www.wadertrack.nl).

DISCUSSION & CONCLUSIONS

In our local population, we found a 30% drop in apparent survival compared to other years. Another study based on dissections and ring recoveries assumed that mostly immature birds of northern and eastern origin had died that time (Schwemmer et al. 2014). This might mislead the interpretation of effects on local scale. We did not find any indications for carry-over effects. Our study shows the importance of monitoring survival rates to understand consequences of natural or man made incidents.

RESULTS

The best model showed differences in apparent survival between 2012 (0.61 ± 0.07) and all other years pooled (0.86 ± 0.03). The second best model showed that apparent survival was lowest in 2012 compared to individual other years (fig. 6). Mass of adults and egg volume were not lower in 2012 compared to other years (fig. 7 and 8).

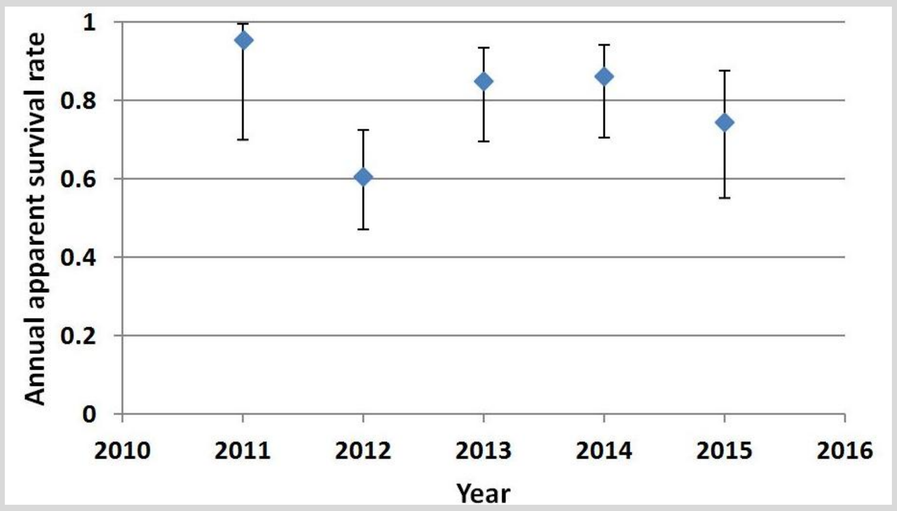

Fig. 6: Apparent survival rates of adult oystercatchers from Meldorf Bight based on model 2 {Phi(t)p(.)}.Sighting probability was constant in the two best models (0.94) and they sum up to 99% model weight.

Fifteen individuals were re-sighted alive within Meldorf Bight either at the beginning or during the cold spell and two individuals were found dead, one locally and one (fig. 2) on the island of Borkum (Lower Saxony, Germany).

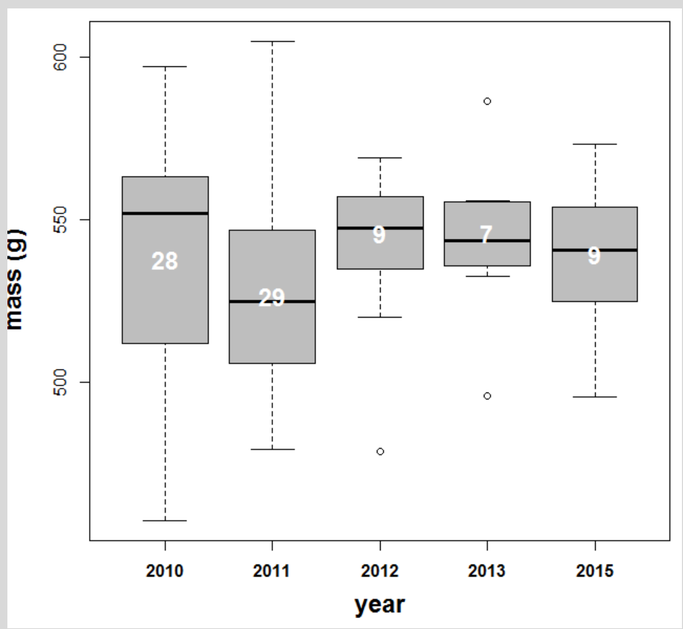

Fig. 7: Body mass of adult oystercatchers in different years. Numbers within boxes show sample size. Mass of three birds re-caught in 2012 differed by only one to 13 gram (0.2% to 2.5%) from original ringing weight.

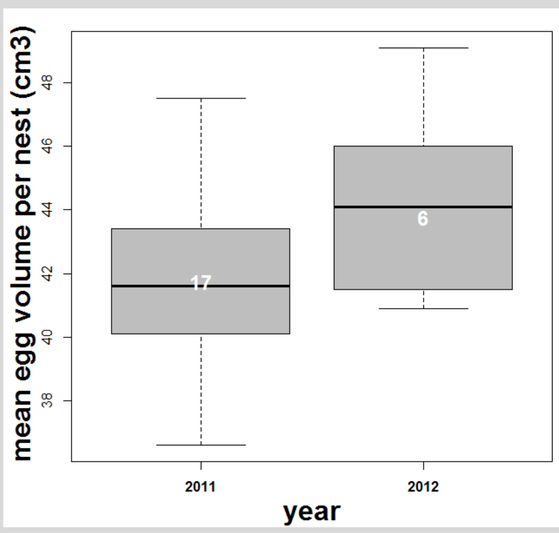

Fig. 8: Egg volume of oystercatchers in Meldorf Bight was similar in 2011 and 2012.

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