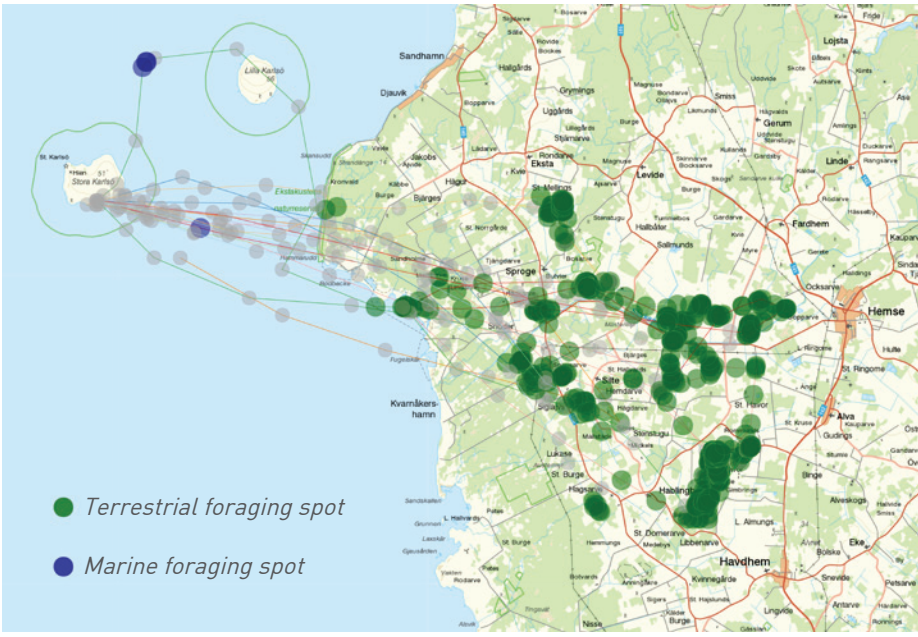
Activity report 2016
Baltic Seabird Project

Old tourist photos make way for new research methods

Using traditional research methods makes it hard to study long term changes in seabird ecology, since you are seldom able to gather decades of data on your own. To be able to outline the changes in the common guillemot (*Uria aalge*) population at Stora Karlsö, Jonas Hentati Sundberg and Olof Olsson from BSP therefore had to develop a new methodology. As Stora Karlsö has been visited by hundreds of thousands of tourists for over more than a century, they came up with the idea of analyzing old tourist photos from the most famous and photographed bird cliffs on the island – Stornasar.

After collecting photos for several years – many distributed by the public – Jonas and Olof could create a photographic time series reaching as far back as 1918! After processing and analyzing the photographs they came up with a timeline showing that the guillemot colony on the island has increased during most of the 20th century. However, during the 1960s and 1970s there was an hitherto unknown dip, possibly because of high concentrations of PCB and DDT etc. in the Baltic Sea during that period. Today, they concluded, there are more common guillemots breeding on Stora Karlsö than ever before in the last 100 years! (Around 16 000 pairs in 2014, steadily increasing.)

The scientific article generated out of the study - *Amateur photographs reveal population history of a colonial seabird* - was published in March 2016 in the highly ranked journal *Current Biology*. The study attracted great interest from media all over the world and was picked up by The Economist, Der Spiegel and many others.



*Foraging trips and -positions in early summer for some lesser black-backed gulls (*Larus fuscus*) breeding on Stora Karlsö. Data adapted from Isaksson et. al. 2016. Map from Lantmäteriet.*

Earthworms on the menu for Karlsö gulls!

In May 2016, BSP's Natalie Isaksson and Tom Evans, with collaborators, published an article in Movement Ecology journal about the foraging ecology of lesser black-backed gulls (*Larus fuscus*) breeding on Stora Karlsö. The colony on the island is one of the largest and most important in the Baltic Sea, with several hundred pairs. The (sub-) species has declined for more than 40 years and it is therefore important to learn more about its ecology and threats to be able to predict and possibly prevent further decline.

Over three years (2011-2013), Natalie and Tom GPS-tracked roughly a thousand foraging trips from 19 different gulls. Although most trips overall were marine, over half of the early breeding season trips (in May) were terrestrial. Upon closer inspection, our researchers found that the gulls primarily visited agricultural fields with low vegetation, probably to feast on delicious earthworms!

From a big-picture standpoint these new findings are important. They tell us that we must not only monitor the seas but also agricultural land to be able to understand changes in the population of the lesser black-backed gulls of the Baltic Sea.

Baltic Seabird Project - BSP

The BSP was started in 1997, funded principally by WWF Sweden and Stockholm University. Through studying seabirds the project aims to gain insights into the Baltic Sea ecosystem and its species. The project's scientific home is Stockholm Resilience Centre at Stockholm University, but we closely collaborate with other universities and maintain continuous collaborations with other researchers at an international level. The project's field studies are focused mainly on Stora Karlsö island and the sea off the west coast of Gotland. The activity report gives a summary of the activities and events before, during and after the 2016 field season.

Guillemots from Karlsö move to both Finland and England

The numbers of common guillemots (*Uria aalge*) on Stora Karlsö rise each year, and some of them decide to move to new locations. During the summer, we learnt that one of "our" birds now breeds at Aspskär island in the Gulf of Finland, and another one at Inner Farne island in northeast England! We know they are Karlsö birds thanks to ringing.

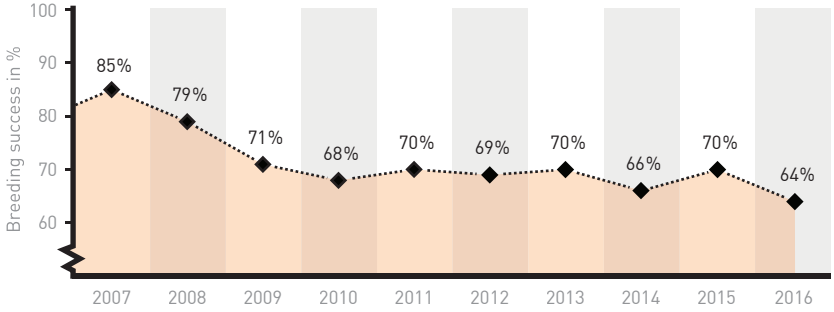
...and a new age record, again!

In 2015 we reported that the worlds probably oldest known common guillemot was sighted on Stora Karlsö. By reading the ring number with a scope, we could track the bird back to chick-ringing 1972! In July 2016 we saw it again - now 44 years old! The bird was still breeding, but unfortunately it was unsuccessful.

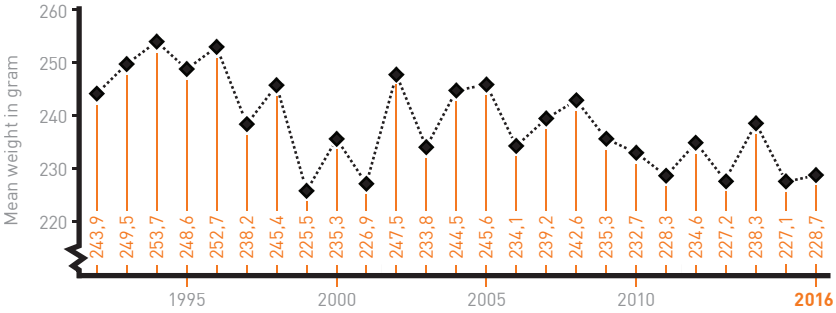
Thanks for helping out!

For two years (2015 and 2016) we set out to ring as many guillemot chicks as possible, facilitating future studies and making it possible to calculate population sizes for the colony etc. This years ringing didn't reach as far as the last, 4474 in comparison to 4937 in 2015, but still well above the usual annual ringing of 3000 chicks. We could not have done this on our own. Common island visitors as well as volunteers from the universities in Uppsala, Stockholm and Lund, and the Institute of Marine Research at Lysekil and elsewhere helped out. We are most grateful and would like to send a BIG THANKS to you all!

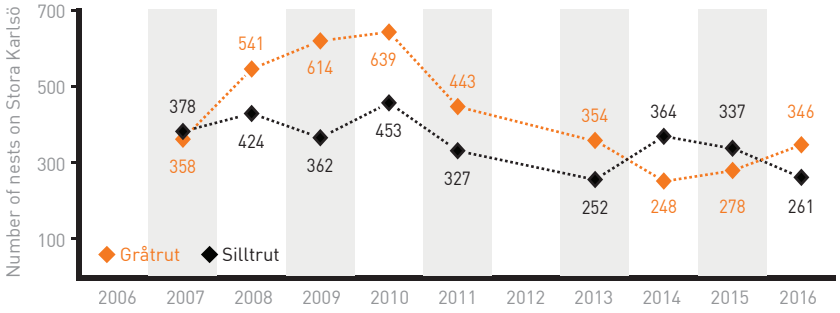
Results from 2016 in figures



The breeding success for guillemots in 2016 - 64% - is based on daily studies of 154 pairs on seven natural breeding ledges.



Mean weight of ringed guillemot chicks 2016 is 228,7 g.



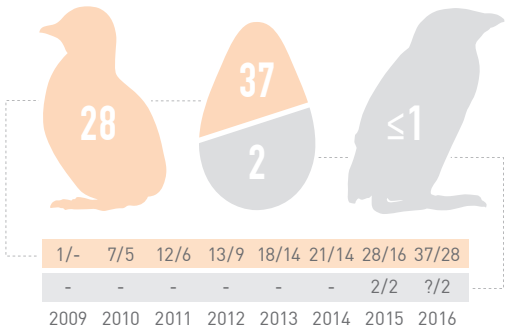
Nest counts of herring gull (23/5 2016) and lesser black-backed gull (2/6 2016) are carried out annually by the BSP.

Outreach work 2016

- For the third year in a row, BSP and WWF Sweden jointly invited politicians and policy-makers to Stora Karlsö in connection to the political event *Almedalsveckan* in Visby. The aim is to create a forum for dialogue about how we can together create a sustainable management plan for the Baltic Sea ecosystem.

- During the early spring, BSP launched a new website, presenting our work with pictures, text and scientific publications etc. Take a look at **www.balticseabird.com**!

- BSP have met media and given talks about the project several times throughout the year. SVT has visited the island to produce TV-shows Mitt i Naturen, and Djur med Julia, and world famous photographer Mattias Klum with team as well as German TV has also produced film. If you don't come to us - we come to you!



Breeding results from Auk Lab 2016. Eggs / chicks of guillemot (orange) and razorbill (gray). The razorbill success is uncertain because of limited monitoring.