

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p>Ninth Meeting of the Seabird Bycatch Working Group <i>Florianópolis, Brazil, 6 - 8 May 2019</i></p> <p>High contrast panels and lights do not reduce bird bycatch in Baltic Sea gillnet fisheries</p> <p><i>Rob Field^a, Rory Crawford^b, Robert Enever^c Tomasz Linkowski^d, Graham Martin^e, Julius Morkūnas^{f,g}, Rasa Morkūnė^f, Yann Rouxel^b, Steffen Oppel^a</i></p> <p>^a RSPB Centre for Conservation Science ^b BirdLife International Marine Programme ^c Fishtek Marine ^d National Marine Fisheries Research Institute, Gdynia, Poland ^e School of Biosciences, University of Birmingham ^f Marine Research Institute, Klaipėda University ^g Lithuanian Ornithological Society</p>
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SUMMARY

Bycatch is a cause of mortality among marine mammals, sea turtles, fish and birds. For some species this mortality may be sufficient to cause population declines. The Baltic Sea is a global 'hotspot' for bird bycatch in gillnet fisheries and is globally important for wintering sea ducks, but no technical solution has been found yet to reduce bird bycatch in gillnet fisheries in the Baltic. Here, we report on trials conducted in the Baltic Sea to test whether two different gillnet modifications with visual stimuli can effectively reduce bird bycatch while maintaining volume of fish caught. We conducted paired trials of two types of visual stimuli attached to nets: 1) high contrast monochrome net panels and 2) net lights (constant green and flashing white LED lights). We measured the amount of fish and birds caught in standard nets and those modified with the visual stimuli. Neither of the two most commonly caught species, Long-tailed Ducks (*Clangula hyemalis*) and Velvet Scoters (*Melanitta fusca*), were deterred from lethal encounters with nets by either black-and-white panels or by steady green or flashing white net lights. Long-tailed Ducks were caught in larger numbers in nets equipped with flashing white net lights than in unmodified nets at the same location. Catch rates of commercial fish were not affected by net lights or net panels placed within the nets. Hence, while the deterrents that we tested successfully maintained fish catch, they failed to reduce bird bycatch and are therefore ineffective. We discuss likely avenues for future investigation of bycatch mitigation methods for gillnet fisheries, including species and location response to net lights, managed fishery closures, above-water distraction of birds and gear switching.