

 <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>Illuminating gillnets to save seabirds and the potential for multi-taxa bycatch mitigation</p> <p><i>J.C. Mangel, J. Wang, J. Alfaro-Shigueto, S. Pingo, A. Jimenez, F. Carvalho, Y. Swimmer & B.J. Godley</i></p>
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Attachment:

Mangel JC, Wang J, Alfaro-Shigueto J, Pingo S, Jimenez A, Carvalho F, Swimmer Y, Godley BJ. 2018. Illuminating gillnets to save seabirds and the potential for multi-taxa bycatch mitigation. R. Soc. open sci.5: 180254. <http://dx.doi.org/10.1098/rsos.180254>

SUMMARY

Bycatch in net fisheries is recognized as a major source of mortality for many marine species, including seabirds. Few mitigation solutions, however, have been identified. We assessed the effectiveness of illuminating fishing nets with green light emitting diodes (LEDs) to reduce the incidental capture of seabirds. Experiments were conducted in the demersal, set gillnet fishery of Constante, Peru and compared 114 pairs of control and illuminated nets. We observed captures of a total of 45 guanay cormorants (*Phalacrocorax bougainvillii*), with 39 caught in control nets and six caught in illuminated nets. Seabird bycatch in terms of catch-per-unit-effort was significantly ($p < 0.05$) higher in control nets than in illuminated nets, representing an 85.1% decline in the cormorant bycatch rate. This study, showing that net illumination reduces seabird bycatch and previous studies showing reductions in sea turtle bycatch without reducing target catch, indicates that net illumination can be an effective multi-taxa bycatch mitigation technique. This finding has broad implications for bycatch mitigation in net fisheries given LED technology's relatively low cost, the global ubiquity of net fisheries and the current