

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p><b>Ninth Meeting of the Seabird Bycatch Working Group</b> <i>Florianópolis, Brazil, 6 - 8 May 2019</i></p> <p><b>Remote electronic monitoring as a potential alternative to on-board observers in small-scale fisheries</b></p> <p><b><i>D.C. Bartholomew, J.C. Mangel, J. Alfaro-Shigueto, S. Pingo, A. Jimenez &amp; B.J. Godley</i></b></p>
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**Attachment:**

Bartholomew, D.C., J.C. Mangel, J. Alfaro-Shigueto, S. Pingo, A. Jimenez & B.J. Godley. 2018. Remote electronic monitoring as a potential alternative to on-board observers in small-scale fisheries. *Biological Conservation* 219: 35-45.  
<https://doi.org/10.1016/j.biocon.2018.01.003>

**SUMMARY**

Small-scale fisheries can greatly impact threatened marine fauna. Peru's small-scale elasmobranch gillnet fishery captures thousands of sharks and rays each year, and incidentally captures sea turtles, marine mammals and seabirds. We assessed the ability of a dedicated fisheries remote electronic monitoring (REM) camera to identify and quantify captures in this fishery by comparing its performance to on-board observer reports. Cameras were installed across five boats with a total of 228 fishing sets monitored. Of these, 169 sets also had on-board fisheries observers present. The cameras were shown to be an effective tool for identifying catch, with > 90% detection rates for 9 of 12 species of elasmobranchs caught. Detection rates of incidental catch were more variable (sea turtle = 50%; cetacean = 80%; pinniped = 100%). The ability to quantify target catch from camera imagery degraded for fish quantities exceeding 15 individuals. Cameras were more effective at quantifying rays than sharks for small catch quantities ( $x \leq 15$  fish), whereas size affected camera performance for large catches ( $x > 15$  fish). Our study showed REM to be effective in detecting and quantifying elasmobranch target catch and pinniped bycatch in Peru's small-scale fishery, but not, without modification, in detecting and quantifying sea turtle and cetacean bycatch. We showed REM can provide a time- and cost-effective method to monitor target catch in small-scale fisheries and can be used to overcome some deficiencies in observer reports. With modifications to the camera specifications, we expect performance to improve for all target catch and bycatch species.