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## **Tags on seabirds: how seriously are instrument-induced behaviours considered?**

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### **Abstract**

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*Equipping birds with tags (defined as any item externally attached to birds, including transmitters, loggers and flipper bands, or implanted devices, such as transponders) gives particular insights into animal biology, although researchers may not give systematic consideration of tag impact. We examined 357 papers published between 1986 and 2009 where tags (excluding rings attached to birds' legs) were used on seabirds, to examine the extent to which researchers considered deleterious effects. Fifty-one (14.3%) papers considered instrumentation effects in their abstract, 31 (60.8%) of which showed statistically significant effects on seabird biology. Of the total data set, 302 (84.6%) articles were classified as 'indirect' (with no stated aim to assess the influence of the equipment used) and although most of these (237; 76.5%) did discuss instrumentation effects, this accounted for less than a mean of 2% of the total length of the text. Despite a clear increase in the number of papers based on tagging technology for seabird study over the previous 24 years, there has been no corresponding increase in documentation of the effects of devices on their bearers. We suggest mechanisms by which this issue might be addressed.*

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