The use of camera traps to study behaviour in wild populations: a case study of the brown bear *Ursus arctos*

Invited Symposium: 'Image in conservation – everything or nothing?'

Melanie Clapham[1*], Owen T. Nevin [1], Andrew D. Ramsey[1], and Frank Rosell[2].

[1]Centre for Wildlife Conservation, National School of Forestry, University of Cumbria, Penrith, CA11 0AH, United Kingdom.
[2]Department of Environmental and Health Studies, Faculty of Art and Sciences, Telemark University College, N-3800 Bø, Telemark, Norway.

* melanie.clapham@cumbria.ac.uk

Research on endangered species often relies on behavioural information to acquire data throughout a range of fields. The demographics of a population can be directly measured, yet the study of social behaviour, plasticity, and interactions is somewhat restricted. Brown bears are a species which, due to their solitary and wide-ranging ecology, are thought to rely heavily on chemical signals as a means of communication. Conducted off the west-coast of British Columbia, Canada, we used camera traps orientated towards bear marking trees to assess behavioural differences between age/sex classes, and by season, to interpret the function of chemical signalling in the species. With camera trapping technology advancing, we are now better equipped to study animal behaviour in less invasive ways in the field. By developing techniques we have been able to study complex interactions and behaviours not possible of bears in captivity. Non-invasive methods used in population assessment (e.g. DNA from hair snares) have begun to make use of scent marking behaviour. However, prior knowledge of the relationship between these sites and the species being studied is required to allow for better estimates to be derived, by accounting for behavioural bias in sampling.