Category
BE Biology, Ecology, Ecosystems, Biodiversity

Session Number
BE-11

Session Title
Using satellite imagery to study wildlife ecology in Polar Regions

Session Description
The last decade has brought about an enormous and rapidly growing interest in the use of satellite imagery to map polar wildlife. The relative simplicity of the Arctic and Antarctic landscapes, and the logistical difficulty of direct survey methods in remote polar areas, has contributed to the interest in mapping wildlife remotely. Furthermore, the varieties of satellite platforms (e.g., spatial resolution, spectral resolution, and spatial coverage of the image footprint) allow for much-needed data fusion techniques that elucidate not only enumeration and trends of animal populations but their relationship to other ecosystem processes. In this session, we will discuss recent technical advances in the use of satellite imagery to study the distribution and abundance of polar wildlife and how these advances have been applied to the ecology of polar vertebrates. Such advances include, but are not limited to, techniques for efficient manual interpretation, crowd-sourcing interpretation, computer vision for automated interpretation, as well as downstream methods for data validation, phenology corrections, and models to understand species-specific detection probability by satellite imagery. Given the methodological similarities in detecting wildlife in both Polar Regions but the different interpretations of ecological processes, it is our aim to bring together researchers with experiences in both regions to discuss and to provide insight about these advances in satellite technology.

Keywords: satellite imagery, wildlife, remote sensing, census, penguins, polar bears, seals, walrus, marine mammals, seabirds, wildlife survey techniques

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