BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 2: e25914
doi: 10.3897/biss.2.25914

OPEN ACCESS

Conference Abstract

Setting the Stage – The Life Cycle of Bio-logging Data: Origin, Mobilization and Data Exchange

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Received: 17 Apr 2018 | Published: 21 May 2018

Citation: Dettki H, Newman P, Davidson S, Cagnacci F (2018) Setting the Stage – The Life Cycle of Bio-logging Data: Origin, Mobilization and Data Exchange. Biodiversity Information Science and Standards 2: e25914. https://doi.org/10.3897/biss.2.25914

Abstract

In recent years, bio-logging data, automatically gathered by sensors deployed on animals, has become one of the fastest growing sources of biodiversity data. This is largely due to the steadily declining mass, size and costs of sensors, continuously opening new opportunities to monitor new species. While previously 'tracking data'—data from spatially enabled sensors such as GPS sensors—was most prominent, currently almost 70% of all bio-logging data is comprised of non-spatial data as e.g., physiological data. In contrast to the biodiversity data community, where standards to mobilize and exchange data are relatively well established, the bio-logging community is still lacking standards to transport data from sensors into repositories, or to mobilize data in a standardized format from different repositories to enable cooperation between users, shared software tools, data aggregation for meta-analysis, or a consistent format for long-term archiving.

To set the stage for a discussion about standards for bio-logging data to be developed or adapted, we present a mind map describing the different pathways of bio-logging data during its life cycle, and the opportunities for standardization within this cycle. As an example we present the use of the Open Geospatial Consortium (OGC) 'SensorML' and 'Observations & Measurements' standards to transfer bio-logging data from a sensor to a repository and ultimately to a user for subsequent analysis. These standards provide

machine-readable methods for describing bio-logging sensors and the measurements they collect, offering a standardized structure that can be customized by the bio-logging community (e.g. with standardized vocabularies) to achieve interoperability.

Keywords

Bio-logging standards, mind map, data mobilisation

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